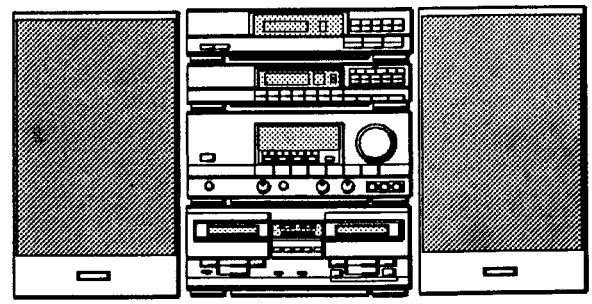
S/M Code No.90－031 DATE OF ISSUE 6/1990－I

AIWA®

CU-D86M

SERVICE MANUAL



STEREO SYSTEM

• BASIC TAPE MECHANISM : TN－1800 • TYPE. E,K,Z

CENTER UNIT	AMPLIFIER	CASSETTE DECK	TUNER	REMOTE CONTROLLER	SPEAKER	CD PLAYER (OPTIONAL)	TURNTABLE (OPTIONAL)
CU－D86M (E,Z type)	MX－D86M	FX－W868	TX－D91	RC－T86ML	SX－E86	※1 DX－D91 ※2 DX－M90M	※3 PX－E80
CU－D86M (K type)	MX－D86M	FX－W86	TX－D91	RC－T86ML	SX－E86	※1 DX－D91 ※2 DX－M90M	※3 PX－E80

※1 As to the service information of DX－D91, see the individual service manual of DX－D91.

※2 As to the service information of DX－M90M, see the individual service manual of DX－M90M.

※3 As to the service information of PX－E80, see the individual service manual of PX－E80.

AIWA Co., Ltd. Tokyo Japan

Printed in Japan

TABLE OF CONTENTS

●SPECIFICATIONS----3
●POWER CONTROL----4

MX-D86M

●ELECTRICAL MAIN PARTS LIST----5~7
●IC BLOCK DIAGRAM-1, TRUTH TABLE-1----8
●IC DESCRIPTION----9~10
●IC BLOCK DIAGRAM-2, TRUTH TABLE-2----10
●SCHEMATIC DIAGRAM-1----11~12
●WIRING-1----13~14
●SCHEMATIC DIAGRAM-2----15~16
●WIRING-2----17~18
●BLOCK DIAGRAM----19~20
●EXPLODED VIEW, MECHANICAL PARTS LIST----21~22

FX-W86/W868

●CAUTIONS WHEN SERVICING----23
●ELECTRICAL MAIN PARTS LIST----24~25
●BLOCK DIAGRAM----26
●SCHEMATIC DIAGRAM----27~28
●WIRING-1----29~30
●ADJUSTMENT----31~32
●PRACTICAL SERVICE FIGURE----32
●WIRING-2----33~34
●IC DESCRIPTION----35~36
●IC BLOCK DIAGRAM----36
●EXPLODED VIEW-1, MECHANICAL PARTS LIST----37~38
●EXPLODED VIEW-2, MECHANICAL PARTS LIST----39~40

TX-D91

●CAUTIONS WHEN SERVICING----41
●ELECTRICAL MAIN PARTS LIST----42~43
●IC DESCRIPTION----44~46
●TRANSISTOR ILLUSTRATION----46
●BLOCK DIAGRAM----47~48
●WIRING-1----49~50
●SCHEMATIC DIAGRAM-1----51~52
●WIRING-2----53~54
●SCHEMATIC DIAGRAM-2----55~56
●ADJUSTMENT----57~58
●PRACTICAL SERVICE FIGURE----58
●EXPLODED VIEW, MECHANICAL PARTS LIST----59

SX-D86/E86

●SPEAKER LIST----60

●ACCESSORIES/PACKAGE LIST----60

SPECIFICATIONS

AMPLIFIER MX-D86M E, K, Z (with the graphic equalizer)

Power output 70 W + 70 W (6 ohms, T.H.D. 10%, 1 kHz) (K model only)
55 W + 55 W (6 ohms, T.H.D. 1%, 1 kHz)

Input sensitivity (load impedance)
PHONO, VIDEO 1/DAT, VIDEO 2, VIDEO 3 IN (AUDIO): 180 mV (47 kohms)

Signal-to-noise ratio
90 dB (CD/DAT DIRECT)

Power requirements
E, Z: 220 V AC, 50/60 Hz
K : 240 V AC, 50/60 Hz

Power consumption
280 W (System total 300 W)

Dimensions 360 (W) × 216 (H) × 324 (D) mm
Weight 7.4 kg

CASSETTE DECK FX-W868/FX-W86

Track format 4 tracks, 2 channels

Frequency response
Metal tape: 20 – 17,000 Hz (only for playback)
CrO_2 tape: 20 – 16,000 Hz
Normal tape: 20 – 15,000 Hz

Signal-to-noise ratio
70 dB (DOLBY NR C-ON, CrO_2 tape, peak level)

Wow and flutter 0.09% (WRMS)
Tape speed 4.8 cm/sec. (1-7/8 ips)
8.6 cm/sec. (high speed)
Rewind time 120 sec. (C-60)
Fast forward time 120 sec. (C-60)
Recording system AC bias
Erase system AC erase
Motor DC servomotor × 2
Heads Playback head × 1 (deck 1)
Record/playback/erase head × 1 (deck 2)
Dimensions 360 (W) × 138 (H) × 309 (D) mm
Weight 3.7 kg

TUNER TX-D91 YE, YK, YZ

<FM section>
Frequency range 87.5 MHz to 108 MHz
Usable sensitivity (IHF)
1.6 µV (75 ohms) 15.2 dBf
Alternate channel selectivity
50 dB (±400 kHz)
Signal-to-noise ratio
70 dB (STEREO) 78 dB (MONO)
Image response ratio
45 dB
Frequency response
20 Hz to 15 kHz (+0.5 dB, –3 dB)
Stereo separation 40 dB at 1 kHz
Antenna 75 ohms (unbalanced)

<MW section>
Frequency range 522 kHz to 1,611 kHz
Usable sensitivity 300 µV/m
Selectivity 23 dB (9 kHz)
Signal-to-noise ratio
53 dB (100 dB input)
Antenna Loop antenna

<LW section>
Frequency range 144 kHz to 290 kHz
Usable sensitivity 1,000 µV/m
Antenna Loop antenna

<Timer section and general>
Program timer "Once" and/or "every"
Sleep timer Capable of setting in 10-minute decrements, 99 minutes maximum
Dimensions 360 (W) × 78 (H) × 308 (D) mm
Weight 2.3 kg

SPEAKER SX-E86

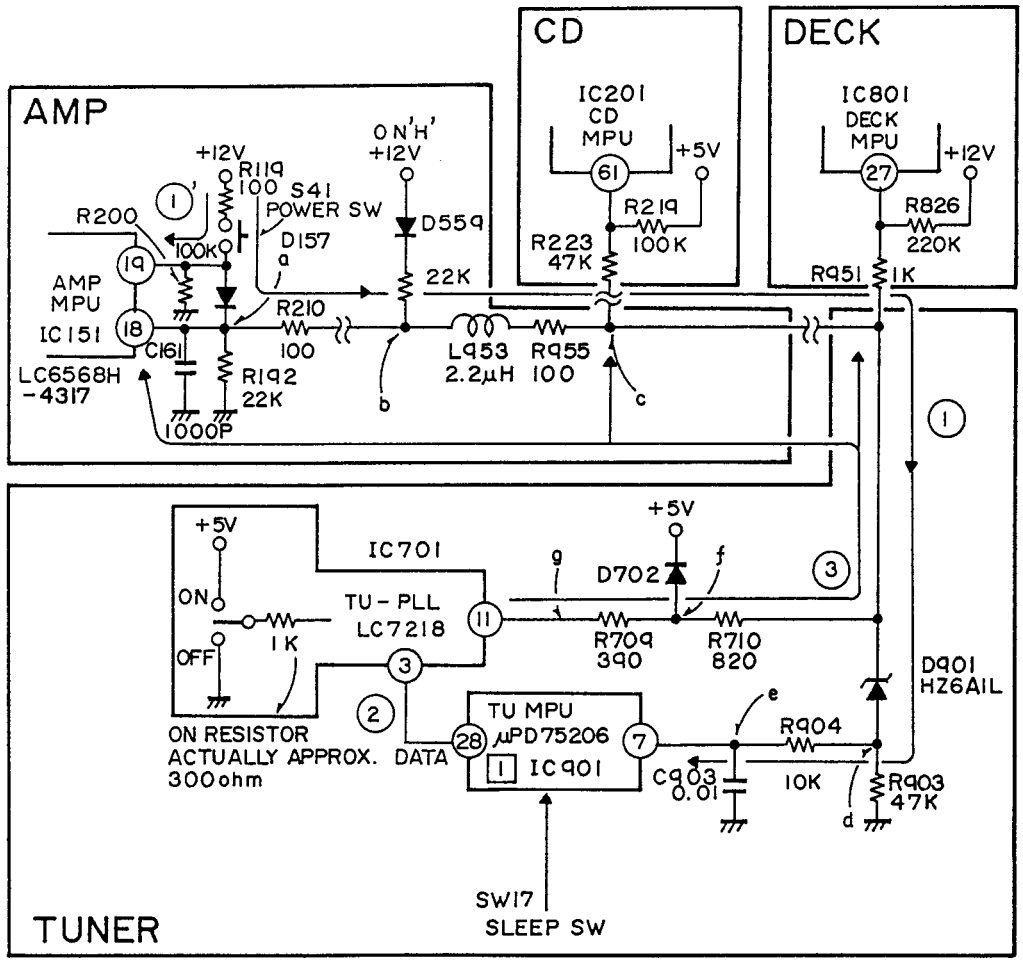
Cabinet type Bass reflex
Speaker 220 mm cone type woofer
60 mm cone type tweeter
30 mm ceramic type super tweeter
Impedance 6 ohms
Output sound pressure level: 89 dB/W/m
Frequency response
42 Hz to 20 kHz
Dimensions 260 (W) × 550 (H) × 200 (D) mm
Weight 5.1 kg

COMMON SECTION

Power requirements
E, Z: 220 V AC, 50/60 Hz
K : 240 V AC, 50/60 Hz
Dimensions 880 (W) × 550 (H) × 324 (D) mm (vertical placement)
1,240 (W) × 550 (H) × 324 (D) mm (horizontal placement)
Weight 23.6 kg

- Design and specifications are subject to change without notice.
- Noise reduction system manufactured under license from Dolby Laboratories Licensing Corporation.
- "Dolby", the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.
- The word "BBE" and the "BBE symbol" are trademarks of BBE Sound, Inc.
- Under license from BBE Sound, Inc.

POWER CONTROL



Voltages at each point when the power switch is held depressed (some values are different at the moment the switch is pressed)

		a	b	c	d	e	f	g
OK	When OFF to ON	10.9	10.5	10.0	4.0	4.0	6.2	5.9
	When ON to OFF	10.7	10.0	9.4	3.0	3.0	3.5	2.0

CU-D86/D86M SYSTEM

1. The power switch (S41) is on the amplifier. When this is pressed, the whole system turns on or off.
2. The tuner has a SLEEP switch (SW17). When this button is pressed during power off, the whole system turns on and the sleep timer operates.

Power control by the power switch (S41)

① The power switch (S41) is pressed (12V) and the microprocessor in the tuner is turned on (5V). (This also turns on the microprocessor (LC6568H-4317) in the amplifier).

② The microprocessor (μPD75206) in the tuner supplies the ON signal to LC7218.

③ LC7218 outputs "H" (5V) and holds the power control line at 5V, and the microprocessors of the system (amplifier, CD player and cassette deck) remain on.

Power control by the timer incorporated in the tuner

● The timer in the microprocessor of the tuner is activated.

② The microprocessor in the tuner supplies the ON signal to LC7218.

③ LC7218 outputs "H" (5V) via pin 11 and the microprocessors in the amplifier, CD player and cassette deck turn on.

Power turned on by the sleep button

● The sleep switch (SW17) is pressed during power off.

② The microprocessor in the tuner supplies the ON signal to LC7218.

③ LC7218 outputs "H" (5V) via pin 11 and the microprocessors in the amplifier, CD player and cassette deck turn on.

MODEL NO.

MX – D86M

ELECTRICAL MAIN PARTS LIST (MX – D86M)

REF.NO.	PART NO.	DESCRIPTION
		≡≡≡ IC ≡≡≡
	87-001-440-019	IC,BA15218N
	87-001-868-019	IC,BU4015B
	87-001-347-019	IC,HD14051BP
	87-001-350-019	IC,HD14052BP
	87-001-530-010	IC,LA3607
	89-VP6-630-010	IC,LC6568H-4317
	87-001-528-010	IC,LC7522
	87-020-758-019	IC,NJM2068SD
	87-020-982-019	IC,STK4162-2(E,K,Z)
	87-001-903-019	IC,STK4172-2(H)
	87-020-943-019	IC,TC9176P
	87-001-869-010	IC,XR1091
	87-001-883-010	IC,XRC5424
		≡≡≡ TRANSISTOR ≡≡≡
	87-026-462-019	TRANSISTOR,2SC1740S(SR)
	87-026-500-019	TRANSISTOR,2SD2144S,UV
	89-110-155-019	TRANSISTOR,2SA1015GR
	89-112-632-019	TRANSISTOR,2SA1263N,OR(E,K,Z)
	89-213-292-019	TRANSISTOR,2SB1329Q
	89-213-702-019	TRANSISTOR,2SB1370E
	89-309-456-019	TRANSISTOR,2SC945LP
	89-318-155-019	TRANSISTOR,2SC1815GR
	89-332-665-019	TRANSISTOR,2SC3266GR
	89-406-555-019	TRANSISTOR,2SD655E
	87-026-269-019	TRANSISTOR,DTA114ES
	87-026-219-019	TRANSISTOR,DTA144ES
	87-026-245-019	TRANSISTOR,DTC114ES
	87-026-287-019	TRANSISTOR,DTC143ES
	89-026-375-019	TRANSISTOR,RN2202
	87-026-377-019	TRANSISTOR,RN2204
		≡≡≡ DIODE ≡≡≡
	87-001-783-019	DIODE,1N4002
	87-001-559-019	DIODE,1SS131
	87-020-465-019	DIODE,1SS133
	87-020-144-019	DIODE,DBA40C
	87-001-820-010	DIODE,GP15B(E,K,Z)
	87-027-346-019	DIODE,ZENER HZ11A2L
	87-027-680-019	DIODE,ZENER HZ11C1L
	87-027-661-019	DIODE,ZENER HZ30-2L
	87-027-393-019	DIODE,ZENER HZ4C2(E,K,Z)
	87-027-332-019	DIODE,ZENER HZ6B1L
	87-027-702-019	DIODE,ZENER HZ6C2L
	87-027-584-019	DIODE,ZENER HZ9C1L
		≡≡≡ MAIN CIRCUIT BOARD SECTION ≡≡≡
C500	★87-018-134-019	CAP,CERA-SOL 0.01-16 Y
C501	★87-010-756-019	CAP,ELECT 6800-50(H)
C501	★87-010-811-019	CAP,ELECT 5600-50(E,K,Z)
C502	★87-010-756-019	CAP,ELECT 6800-50(H)
C502	★87-010-811-019	CAP,ELECT 5600-50(E,K,Z)
C503	★87-010-374-019	CAP,ELECT 47-10
C504	★87-010-263-019	CAP,ELECT 100-10
C505	★87-010-403-019	CAP,ELECT 3.3-50 SME
C509	★87-010-247-019	CAP,ELECT 100-50
C510	★87-010-374-019	CAP,ELECT 47-10
C511	★87-010-248-019	CAP,ELECT 220/10
C521	★87-010-384-019	CAP,ELECT 100-25 SME
C522	★87-010-384-019	CAP,ELECT 100-25 SME
C523	★87-010-385-019	CAP,ELECT 220-25
C531	★87-010-384-019	CAP,ELECT 100-25 SME
C551	★87-010-390-019	CAP,ELECT 3300-25 SME
C553	★87-010-382-019	CAP,ELECT 22-25 SME
C554	★87-010-381-019	CAP,ELECT 330-16 SME
C555	★87-012-341-019	CAP,ELECT 10-16 SXJ
C556	★87-018-134-019	CAP,CERA-SOL 0.01-16 Y
C557	★87-010-374-019	CAP,ELECT 47-10
C558	★87-010-263-019	CAP,ELECT 100-10
C601	★87-018-115-019	CAP,CERA-SOL 47P-50 SL
C602	★87-018-115-019	CAP,CERA-SOL 47P-50 SL
C603	★87-010-404-019	CAP,ELECT 4.7-50 SME
C604	★87-010-404-019	CAP,ELECT 4.7-50 SME
C605	★87-010-404-019	CAP,ELECT 4.7-50 SME
C606	★87-010-404-019	CAP,ELECT 4.7-50 SME
C607	★87-010-374-019	CAP,ELECT 47-10
C647	★87-018-125-019	CAP,CERA-SOL 330P-50 B
C651	★87-018-131-019	CAP,CERA-SOL 1000P-50 B
C652	★87-018-127-019	CAP,CERA-SOL 470P-50 B
C653	★87-010-404-019	CAP,ELECT 4.7-50 SME
C654	★87-010-546-019	CAP,ELECT 0.33-50 SME
C755	★87-018-103-019	CAP,CERA-SOL 8.2P-50 SL
C756	★87-018-103-019	CAP,CERA-SOL 8.2P-50 SL
C757	★87-010-404-019	CAP,ELECT 4.7-50 SME
C758	★87-010-404-019	CAP,ELECT 4.7-50 SME
C807	★87-010-421-019	CAP,ELECT 4.7-50 5L
C808	★87-010-421-019	CAP,ELECT 4.7-50 5L
C809	★87-010-404-019	CAP,ELECT 4.7-50 SME
C810	★87-010-404-019	CAP,ELECT 4.7-50 SME
C815	★87-010-405-019	CAP,ELECT 10-50 SME
C816	★87-010-405-019	CAP,ELECT 10-50 SME
C819	★87-010-404-019	CAP,ELECT 4.7-50 SME
C820	★87-010-404-019	CAP,ELECT 4.7-50 SME
C821	★87-010-401-019	CAP,ELECT 1-50 SME
C822	★87-010-404-019	CAP,ELECT 4.7-50 SME
C823	★87-010-401-019	CAP,ELECT 1-50 SME
C825	★87-010-236-019	CAP,ELECT 1000-10
C826	★87-010-236-019	CAP,ELECT 1000-10
C827	★87-018-131-019	CAP,CERA-SOL 1000P-50 B
C828	★87-018-131-019	CAP,CERA-SOL 1000P-50 B
C829	★87-010-381-019	CAP,ELECT 330-16 SME
C851	★87-010-404-019	CAP,ELECT 4.7-50 SME
C852	★87-010-404-019	CAP,ELECT 4.7-50 SME
C853	★87-018-124-019	CAP,CERA-SOL 270P-50 B
C854	★87-018-124-019	CAP,CERA-SOL 270P-50 B
C855	★87-010-382-019	CAP,ELECT 22-25 SME
C856	★87-010-382-019	CAP,ELECT 22-25 SME
C857	★87-018-140-019	CAP,CERA-SOL 2.2P-50 CH
C858	★87-018-140-019	CAP,CERA-SOL 2.2P-50 CH
C859	★87-010-260-019	CAP,ELECT 47-25 SME
C860	★87-010-260-019	CAP,ELECT 47-25 SME
C861	★87-010-544-019	CAP,ELECT 0.1-50
C862	★87-010-544-019	CAP,ELECT 0.1-50
C863	★87-010-544-019	CAP,ELECT 0.1-50
C864	★87-010-544-019	CAP,ELECT 0.1-50
C865	★87-010-247-019	CAP,ELECT 100-50 SME
C867	★87-018-123-019	CAP,CERA-SOL 220P
C868	★87-018-123-019	CAP,CERA-SOL 220P
C901	★87-010-221-019	CAP,ELECT 470-10
C902	★87-010-221-019	CAP,ELECT 470-10
C903	★87-010-221-019	CAP,ELECT 470-10
C904	★87-010-236-019	CAP,ELECT 1000-10
C919	★87-010-263-019	CAP,ELECT 100-10
C951	★87-018-131-019	CAP,CERA-SOL 1000P-50 B
C952	★87-018-209-019	CAP,CERA-SOL 0.1-50V
C953	★87-010-804-019	CAP,CERA-SOL 0.01-16Y(Z ONLY)
C954	★87-010-804-019	CAP,CERA-SOL 0.01-16Y(Z ONLY)

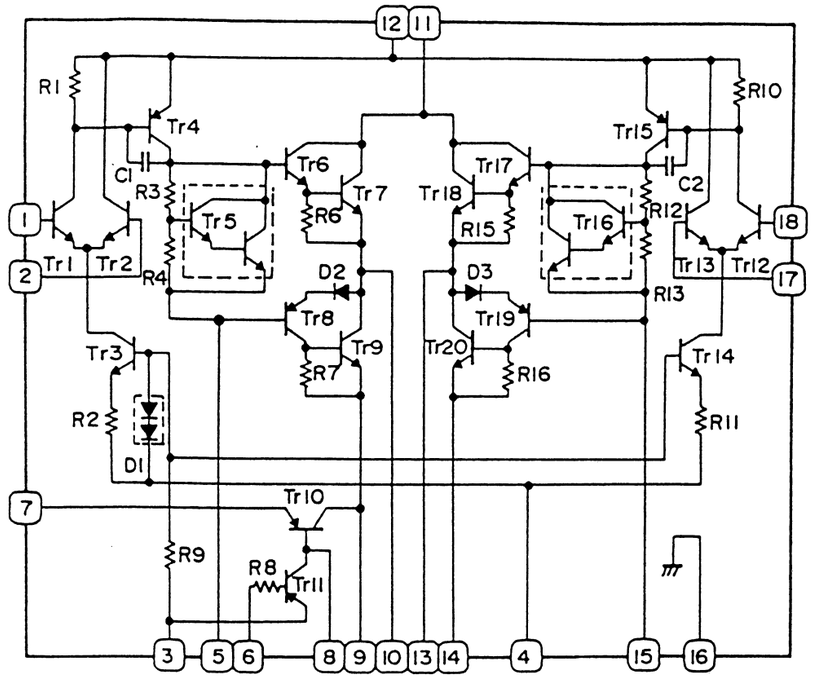
REF.NO.	PART NO.	DESCRIPTION
⚠F5	87-035-408-010	FUSE,3.15A 250V T-L(E,K,Z)
⚠FR501	87-029-016-010	RESISTOR,FUSE 22 1/2W(H)
⚠FR501	87-029-059-019	RESISTOR,FUSE 56 1/4W(E,K,Z)
J951	87-009-204-010	JACK,6.3 YKB21-5012(MIC)
J952	81-669-655-010	JACK,6.3 W/S AU(PHONES)
J953-1	★89-VP5-639-010	JACK,PIN 6P AV(VIDEO-1 IN)
J953-2	+++	JACK,PIN 6P AV(VIDEO-1 OUT)
J953-3	+++	JACK,PIN 6P AV(VIDEO-2 IN)
J953-4	+++	JACK,PIN 6P AV(MONITOR OUT)
J953-5	+++	JACK,PIN 6P AV(VIDEO-1/DAT-L)
J953-6	+++	JACK,PIN 6P AV(VIDEO-1/DAT-R)
J954-1	★89-VP5-638-010	JACK,PIN 6P EARTH(PHONO-L)
J954-2	+++	JACK,PIN 6P EARTH(PHONO-R)
J954-3	+++	JACK,PIN 6P EARTH(VIDEO-1/DAT-L)
J954-4	+++	JACK,PIN 6P EARTH(VIDEO-1/DAT-R)
J954-5	+++	JACK,PIN 6P EARTH(VIDEO-2-L)
J954-6	+++	JACK,PIN 6P EARTH(VIDEO-2-R)
J955	★87-009-065-010	CONNECTOR,15P FG(1.TUNER)
J956	★87-009-063-010	CONNECTOR,11P FG(2.CD)
J957-1	★87-049-851-010	JACK,PIN 2P(SURROUND SPEAKER-L)
J957-2	+++	JACK,PIN 2P(SURROUND SPEAKER-R)
J958	★87-033-197-019	TERMINAL,SP-4P 2(SPEAKERS)
L951	★87-005-366-019	COIL,1UH
L952	★87-005-366-019	COIL,1UH
L953	★87-003-098-019	COIL,2.2UH
R525	★87-022-050-019	RES,M/F 1W-0.22J
R526	★87-022-050-019	RES,M/F 1W-0.22J
R529	★87-022-050-019	RES,M/F 1W-0.22J(H)
R530	★87-022-050-019	RES,M/F 1W-0.22J(H)
RY551	87-045-285-010	RELAY,VB12MB
RY951	87-045-307-010	RELAY,LZ-12WM-K
		≡≡≡ FRONT CIRCUIT BOARD SECTION ≡≡≡
C101	★87-010-405-019	CAP,ELECT 10-50 SME
C102	★87-010-415-019	CAP,ELECT 10-50
C151	★87-010-401-019	CAP,ELECT 1-50 SME
C152	★87-018-134-019	CAP,CERA-SOL 0.01-16 Y
C154	★87-010-421-019	CAP,ELECT 4.7-50 5L
C156	★87-010-405-019	CAP,ELECT 10-50 SME
C157	★87-010-374-019	CAP,ELECT 47-10
C158	★87-018-127-019	CAP,CERA-SOL 470P-50 B
C159	★87-018-209-019	CAP,CERA-SOL 0.1
C160	★87-018-209-019	CAP,CERA-SOL 0.1
C161	★87-018-134-019	CAP,CERA-SOL 0.01-16Y
C162	★87-018-131-019	CAP,CERA-SOL 1000P
C166	★87-010-807-019	CAP,ELECT 330-6.3
C170	★87-010-101-019	CAP,ELECT 220-16
C201	★87-018-131-019	CAP,CERA-SOL 1000P
C202	★87-018-131-019	CAP,CERA-SOL 1000P
C251	★87-010-404-019	CAP,ELECT 4.7-50 SME
C252	★87-010-404-019	CAP,ELECT 4.7-50 SME
C253	★87-010-404-019	CAP,ELECT 4.7-50 SME
C254	★87-010-234-019	CAP,ELECT 47-16 5L
C255	★87-018-134-019	CAP,CERA-SOL 0.01-16 Y
C256	★87-018-195-019	CAP,CERA-SOL 1200P
C257	★87-010-401-019	CAP,ELECT 1-50 SME
C259	★87-018-209-019	CAP,CERA-SOL 0.1
C261	★87-018-121-019	CAP,CERA-SOL 150P-50 B
C262	★87-018-121-019	CAP,CERA-SOL 150P-50 B
C301	★87-010-404-019	CAP,ELECT 4.7-50 SME
C302	★87-010-404-019	CAP,ELECT 4.7-50 SME
C303	★87-018-127-019	CAP,CERA-SOL 470P-50 B
C304	★87-018-127-019	CAP,CERA-SOL 470P-50 B
C307	★87-010-072-019	CAP,ELECT 2.2-50 SRE
C308	★87-010-402-019	CAP,ELECT 2.2-50 SME
C311	★87-010-071-019	CAP,ELECT 1-50 5L
C312	★87-010-401-019	CAP,ELECT 1-50 SME
C315	★87-010-068-019	CAP,ELECT 0.22-50 5L
C316	★87-010-545-019	CAP,ELECT 0.22-50 SME
C317	★87-018-201-019	CAP,CERA-SOL 5600P
C318	★87-018-201-019	CAP,CERA-SOL 5600P
C321	★87-018-132-019	CAP,CERA-SOL 2200P-16 X
C322	★87-018-132-019	CAP,CERA-SOL 2200P-16 X
C325	★87-018-129-019	CAP,CERA-SOL 680P
C326	★87-018-129-019	CAP,CERA-SOL 680P
C329	★87-018-125-019	CAP,CERA-SOL 330P-50 B
C330	★87-018-125-019	CAP,CERA-SOL 330P-50 B
C331	★87-018-133-019	CAP,CERA-SOL 4700P-16 X
C332	★87-018-133-019	CAP,CERA-SOL 4700P-16 X
C333	★87-010-405-019	CAP,ELECT 10-50
C334	★87-010-248-019	CAP,ELECT 220-10 SME
C335	★87-018-134-019	CAP,CERA-SOL 0.01-16 Y
C338	★87-010-415-019	CAP,ELECT 10-50
C401	★87-010-401-019	CAP,ELECT 1-50 SME
C402	★87-010-401-019	CAP,ELECT 1-50 SME
C403	★87-010-401-019	CAP,ELECT 1-50 SME
C404	★87-010-401-019	CAP,ELECT 1-50 SME
C407	★87-010-401-019	CAP,ELECT 1-50 SME
C408	★87-010-401-019	CAP,ELECT 1-50 SME
C411	★87-010-546-019	CAP,ELECT 0.35-50 SME
C412	★87-010-546-019	CAP,ELECT 0.35-50 SME
C413	★87-010-400-019	CAP,ELECT 0.47-50 SME
C414	★87-010-400-019	CAP,ELECT 0.47-50 SME
C415	★87-010-404-019	CAP,ELECT 4.7-50 SME
C416	★87-010-404-019	CAP,ELECT 4.7-50 SME
C419	★87-018-109-019	CAP,CERA-SOL 22P-50 SL
C420	★87-018-109-019	CAP,CERA-SOL 22P-50 SL
C423	★87-010-400-019	CAP,ELECT 0.47-50
C424	★87-010-400-019	CAP,ELECT 0.47-50
C425	★87-010-421-019	CAP,ELECT 4.7-50 5L
C426	★87-010-421-019	CAP,ELECT 4.7-50 5L
C427	★87-010-401-019	CAP,ELECT 1-50
C431	★87-018-130-019	CAP,CERA-SOL 820P-50 B
C432	★87-018-130-019	CAP,CERA-SOL 820P-50 B
C433	★87-010-071-019	CAP,ELECT 1-50 5L
C434	★87-010-071-019	CAP,ELECT 1-50 5L
C441	★87-010-263-019	CAP,ELECT 100-10
C442	★87-010-221-019	CAP,ELECT 470-10
C443	★87-010-221-019	CAP,ELECT 470-10
CF151	★87-030-167-019	VIB,CER CST4.0MHZ
⚠F5	87-035-408-010	FUSE,T3.15A(E,K,Z)
FL102	89-VP5-626-010	FL,BG-762GK(GEQ)
J201-1	89-VP5-637-010	JACK,PIN 3P AU(VIDEO-3 L)
J201-2	+++	JACK,PIN 3P AU(VIDEO-3 R)
J201-3	+++	JACK,PIN 3P AU(VIDEO-3 V)
L151	★87-005-372-019	COIL,S 1MMH
L152	★87-005-135-019	COIL,220UH
LED1	87-001-123-019	LED,SLZ-981C-02(1/HEAVY)
LED2	87-001-123-019	LED,SLZ-981C-02(2/SOFT)
LED3	87-001-123-019	LED,SLZ-981C-02(3/VOCAL)
LED4	87-001-123-019	LED,SLZ-981C-02(4/HS)
LED5	87-001-123-019	LED,SLZ-981C-02(5/CLEAR)
LED6	87-001-123-019	LED,SLZ-981C-02(MANUAL)
LED7	87-001-123-019	LED,SLZ-981C-02(PROGRAM)
LED8	87-001-123-019	LED,SLZ-981C-02(CD/DAT DIRECT)
LED9	87-001-123-019	LED,SLZ-981C-02(SURROUND)
LED10	87-001-123-019	LED,SLZ-981C-02(BBE)
LED11	87-001-123-019	LED,SLZ-981C-02(DIRECT REC.)

REF.NO.	PART NO.	DESCRIPTION
LED12	87-001-124-019	LED,SLZ381C-02-T1(TAPE)
LED13	87-001-124-019	LED,SLZ381C-02-T1(TUNER)
LED14	87-001-124-019	LED,SLZ381C-02-T1(PHONO)
LED15	87-001-124-019	LED,SLZ381C-02-T1(CD)
LED16	87-001-124-019	LED,SLZ381C-02-T1(VIDEO-1/DAT)
LED17	87-001-124-019	LED,SLZ381C-02-T1(VIDEO-2)
LED18	87-001-124-019	LED,SLZ381C-02-T1(VIDEO-3)
LED19	87-001-123-019	LED,SLZ981C-02-T1(REMOTE BAL.-L)
LED20	87-001-123-019	LED,SLZ981C-02-T1(REMOTE BAL.-R)
LED21	87-001-123-019	LED,SLZ981C-02-T1(VOL.INDI.0)
LED22	87-001-123-019	LED,SLZ981C-02-T1(VOL.INDI.1)
LED23	87-001-123-019	LED,SLZ981C-02-T1(VOL.INDI.2)
LED24	87-001-123-019	LED,SLZ981C-02-T1(VOL.INDI.3)
LED25	87-001-123-019	LED,SLZ981C-02-T1(VOL.INDI.4)
LED26	87-001-123-019	LED,SLZ981C-02-T1(VOL.INDI.5)
LED27	87-001-123-019	LED,SLZ981C-02-T1(VOL.INDI.6)
LED28	87-001-123-019	LED,SLZ981C-02-T1(VOL.INDI.7)
LED29	87-001-123-019	LED,SLZ981C-02-T1(VOL.INDI.8)
LED30	87-001-123-019	LED,SLZ981C-02-T1(VOL.INDI.9)
LED31	87-001-123-019	LED,SLZ981C-02-T1(VOL.INDI.10)
LED32	87-001-123-019	LED,SLZ981C-02-T1(VOL.INDI.MAX)
LED33	87-001-123-019	LED,SLZ981C-02-T1(MONI.VIDEO-1)
LED34	87-001-123-019	LED,SLZ981C-02-T1(MONI.VIDEO-2)
LED35	87-001-123-019	LED,SLZ981C-02-T1(MONI.VIDEO-3)
LED36	87-001-123-019	LED,SLZ981C-02-T1(MUTING)
RE101	89-VP5-634-010	ENCODER,DIA16(VOLUME UP/DOWN)
S1	87-036-142-019	TACT SW(1)
S2	87-036-142-019	TACT SW(2)
S3	87-036-142-019	TACT SW(3)
S4	87-036-142-019	TACT SW(4)
S5	87-036-142-019	TACT SW(5)
S6	87-036-142-019	TACT SW(HEAVY)
S7	87-036-142-019	TACT SW(SOFT)
S8	87-036-142-019	TACT SW(VOCAL)
S9	87-036-142-019	TACT SW(HS)
S10	87-036-142-019	TACT SW(CLEAR)
S11	87-036-142-019	TACT SW(60HZ△)
S12	87-036-142-019	TACT SW(150HZ△)
S13	87-036-142-019	TACT SW(350HZ△)
S14	87-036-142-019	TACT SW(1KHZ△)
S15	87-036-142-019	TACT SW(2.5KHZ△)
S16	87-036-142-019	TACT SW(6KHZ△)
S17	87-036-142-019	TACT SW(15KHZ△)
S18	87-036-142-019	TACT SW(60HZ▽)
S19	87-036-142-019	TACT SW(150HZ▽)
S20	87-036-142-019	TACT SW(350HZ▽)
S21	87-036-142-019	TACT SW(1KHZ▽)
S22	87-036-142-019	TACT SW(2.5KHZ▽)
S23	87-036-142-019	TACT SW(6KHZ▽)
S24	87-036-142-019	TACT SW(15KHZ▽)
S25	87-036-142-019	TACT SW(GEQ ON/OFF)
S26	87-036-142-019	TACT SW(DISPLAY)
S27	87-036-142-019	TACT SW(CALIBRATION)
S28	87-036-142-019	TACT SW(MEMORY)
S29	87-036-142-019	TACT SW(TAPE)
S30	87-036-142-019	TACT SW(TUNER)
S31	87-036-142-019	TACT SW(PHONO)
S32	87-036-142-019	TACT SW(CD)
S33	87-036-142-019	TACT SW(VIDEO-1/DAT)
S34	87-036-142-019	TACT SW(VIDEO-2)
S35	87-036-142-019	TACT SW(VIDEO-3)
S36	87-036-142-019	TACT SW(CD/DAT DIRECT)
S37	87-036-142-019	TACT SW(SURROUND)
S38	87-036-142-019	TACT SW(BBE)

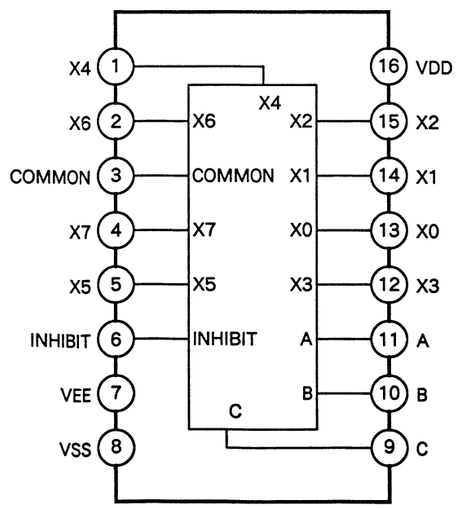
REF.NO.	PART NO.	DESCRIPTION
S39	87-036-142-019	TACT SW(DIRECT RECORDING)
S40	87-036-142-019	TACT SW(MUTING,WAKE UP)
S41	87-036-142-019	TACT SW(POWER,STANDBY/ON)
VR201	89-VP5-635-010	VOLUME 10KA(MIC MIXING)
VR202	89-VP5-636-010	VOLUME 500KA(DSL)
VR401	89-VP5-635-010	VOLUME 10KA(BBE)
		＝＝＝ POWER-1 CIRCUIT BOARD SECTION ＝＝＝
⚠	87-033-213-019	FUSE CLAMP
⚠F2	87-035-139-019	FUSE,T2.5A
⚠R1	*87-022-184-019	RES,M/F 0.33-1W
⚠R2	*87-022-184-019	RES,M/F 0.33-1W
		＝＝＝ POWER-2 CIRCUIT BOARD SECTION(E,K,Z ONLY) ＝＝＝
⚠	87-033-213-019	FUSE CLAMP
⚠F1	87-035-139-019	FUSE,T2.5A
		＝＝＝ POWER-3 CIRCUIT BOARD SECTION(H ONLY) ＝＝＝
⚠	87-033-213-019	FUSE CLAMP
⚠F3	87-035-139-019	FUSE,T2.5A
⚠F4	87-035-139-019	FUSE,T2.5A
		＝＝＝ POWER-4 CIRCUIT BOARD SECTION(H ONLY) ＝＝＝
⚠S101	87-036-173-010	SLIDE SW(AC VOLTAGE)
		＝＝＝ TR CIRCUIT BOARD SECTION(E,K,Z ONLY) ＝＝＝
		＝＝＝ MISCELLANEOUS ＝＝＝
⚠	*82-187-797-010	AC CORD E(H,E,Z)
⚠	*82-187-796-019	AC CORD BS(K)
⚠	*87-085-185-010	AC CORD BUSHING
⚠PT1	89-VP6-606-019	POWER TRANSFORMER(H)
⚠PT1	89-VP6-608-019	POWER TRANSFORMER(E,Z)
⚠PT1	89-VP6-609-019	POWER TRANSFORMER(K)

IC BLOCK DIAGRAM – 1,TRUTH TABLE – 1 (MX – D86M)

IC,STK4162 Ⅱ,STK4172 Ⅱ



IC, HD14051BP



HD14051BP

CONTROL INPUT			ON SWITCH	FUNCTION
C	B	A		
0	0	0	×0	TAPE
0	0	1	×1	TUNER
0	1	0	×2	PHONO
0	1	1	×3	CD
1	0	0	×4	VIDEO-1/DAT
1	0	1	×5	VIDEO-2
1	1	0	×6	VIDEO-3
1	1	1	×7	(MUTE)

IC DESCRIPTION (MX – D86M)

IC,LC6568H – 4317

Pin No.	Pin Name	I/O	Description	ACTIVE
1~9	a~i	O	LED lighting output.	H
10~13	KEY-0~3	I	Key inputs.	H
14	I-RMC	I	Remote control signal input.	H
15	I-RE·A	I	Volume control data input.	L
16	I-RE·B	I	Volume control data input.	L
17	KEY-4	I	Key input.	H
18	I-POWER	I	"H" when the power is turned on. The input functions are as shown in the table on the right. Note : The last function is restored by the remote control input.	H
19	KEY-POWER	I		H
20	O-$\overline{\text{POWER}}$	O	"L" output when the power is turned on.	L
21	I/O-$\overline{\text{SERIAL}}$	I/O	Control I/O serial (8-bit) terminal with the deck, tuner and CD player. 1. Auto Function (The function is set to CD or TAPE when the CD player or deck starts to play.) 2. Easy Operation ◦ CD SYNCHRO REC ・Changes the function to CD and holds it. ・Sets the system to the DIRECT REC mode during HIGH SPEED CD REC. ◦ Starts the deck or CD player when the TAPE or CD function key is turned on.	L
22	O-$\overline{\text{BBE}}$	O	BBE LED lighting and BBE ON/OFF signal switching output.	L
23	O-$\overline{\text{SURROUND}}$	O	SURROUND LED lighting, SURROUND ON/OFF signal switching and SURROUND speaker ON/OFF control output.	L
24	O-$\overline{\text{EQ REC}}$	O	DIRECT REC LED lighting and REC OUT signal switching output.	L
25	O-DATA	O	Outputs a signal to switch the graphic equalizer, electronic volume, input attenuator, function and direct mode.	H
26	O-CLK	O	Outputs a signal to switch the graphic equalizer, electronic volume, input attenuator, function and direct mode.	H
27	O-INPUT	O	Output to control shift register BU4015. (when switching the input attenuator, function and direct mode)	H
28	O-GEQ	O	Output to control the graphic equalizer.	H
29	O-EVR	O	Electronic volume control STB terminal.	H
30	TEST	I	Connected to test terminal Vss.	–
31	VSS	–	Connected to ground.	–
32	OSC-1	–	Clock oscillation pins.	–
33	OSC-2			
34	RESET	I	"L" input resets the IC.	–
35	HOLD	I	"H" input holds the microprocessor, stops oscillations and sets the system to the backup mode. (Goes "L" when the protection circuit operates)	H
36	O-VIDEO 2	O	Video signal switching outputs.	H
37	O-VIDEO 3	O		
38	I-COMP	I	Spectrum analyzer lighting level input.	H

	VR UP	VR DOWN	Not accepted
⑮	↑	↓	—
⑯	L	L	H

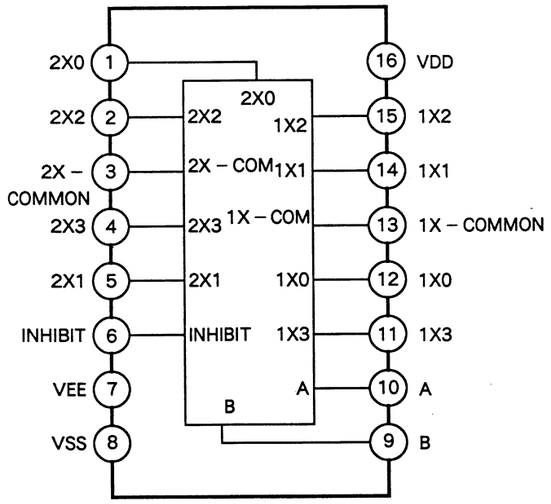
	LAST FUNCTION	TUNER FUNCTION
⑱	H	H
⑲	H	L

	VIDEO 1	VIDEO 2	VIDEO 3
㊱	L	H	L
㊲	L	L	H

Pin No.	Pin Name	I/O	Description	ACTIVE
39	O-COMP A	O	Spectrum analyzer BPF control output.	H
40	O-COMP B	O	Spectrum analyzer BPF control output.	H
41	O-COMP C	O	Spectrum analyzer BPF control output.	H
42	O-LED	O	Dynamic lighting LED output.	H
43~50	$\overline{\text{1G}}$~$\overline{\text{8G}}$	O	Grid and key matrix outputs to light the FL display.	L
51	-Vp	–	Connected to -31V.	–
52	$\overline{\text{9G}}$	O	Calibration LED output.	L
53~63	j~t	O	Segment outputs to light the FL display.	H
64	VDD	–	Positive ⊕ power terminal.	–

IC BLOCK DIAGRAM – 2,TRUTH TABLE – 2 (MX – D86M)

IC, HD14052BP



HD14052BP

CONTROL INPUT B	CONTROL INPUT A	ON SWITCH	FUNCTION
0	0	×0	BBE ON
0	1	×1	BBE OFF
1	0	×2	——
1	1	×3	——

GND O-$\overline{\text{BBE}}$

HD14052BP

CONTROL INPUT B	CONTROL INPUT A	ON SWITCH	FUNCTION
0	0	×0	SURROUND ON
0	1	×1	NORMAL
1	0	×2	DIRECT+SURROUND
1	1	×3	DIRECT ON

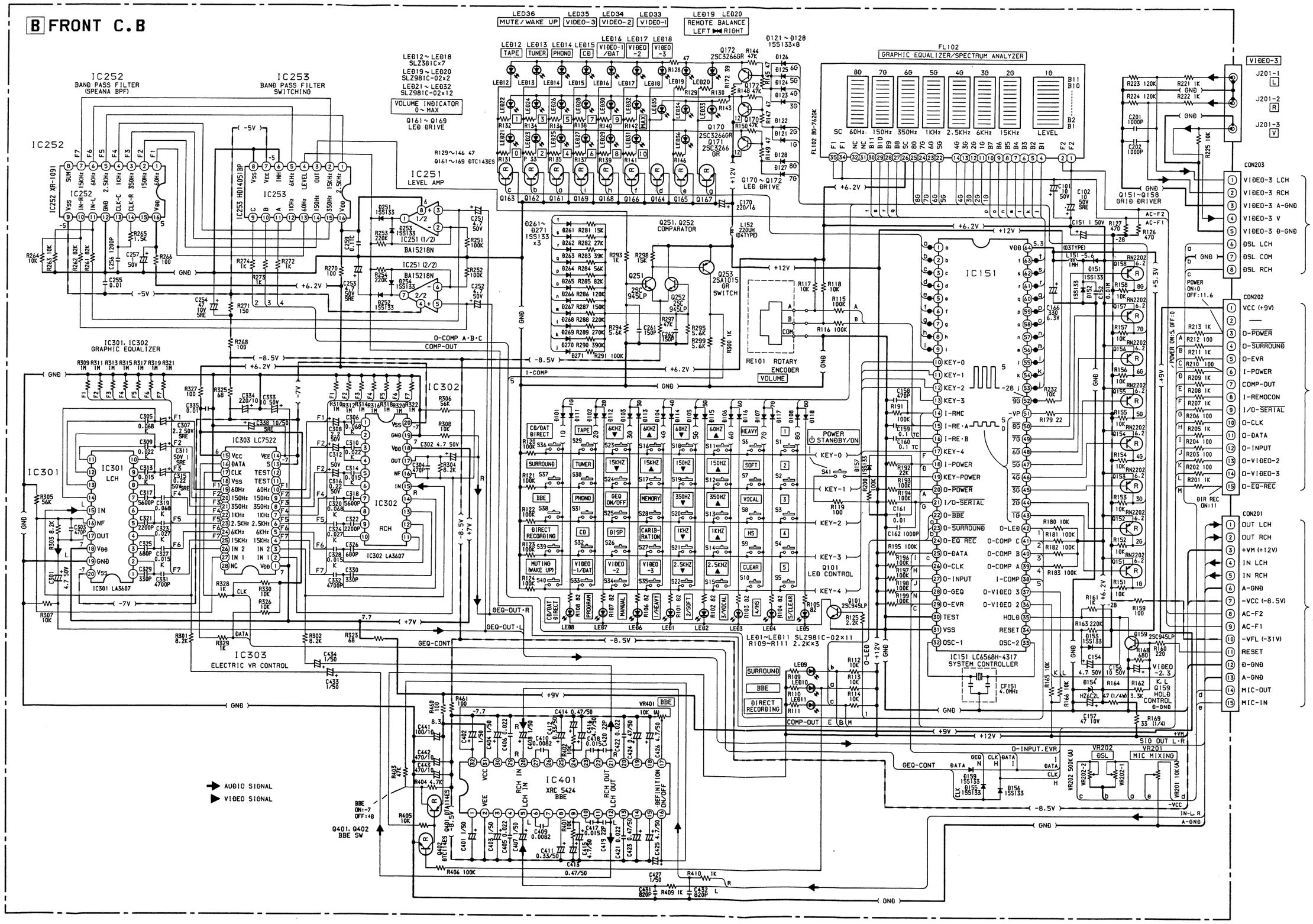
DIRECT O-$\overline{\text{SURR}}$

HD14052BP

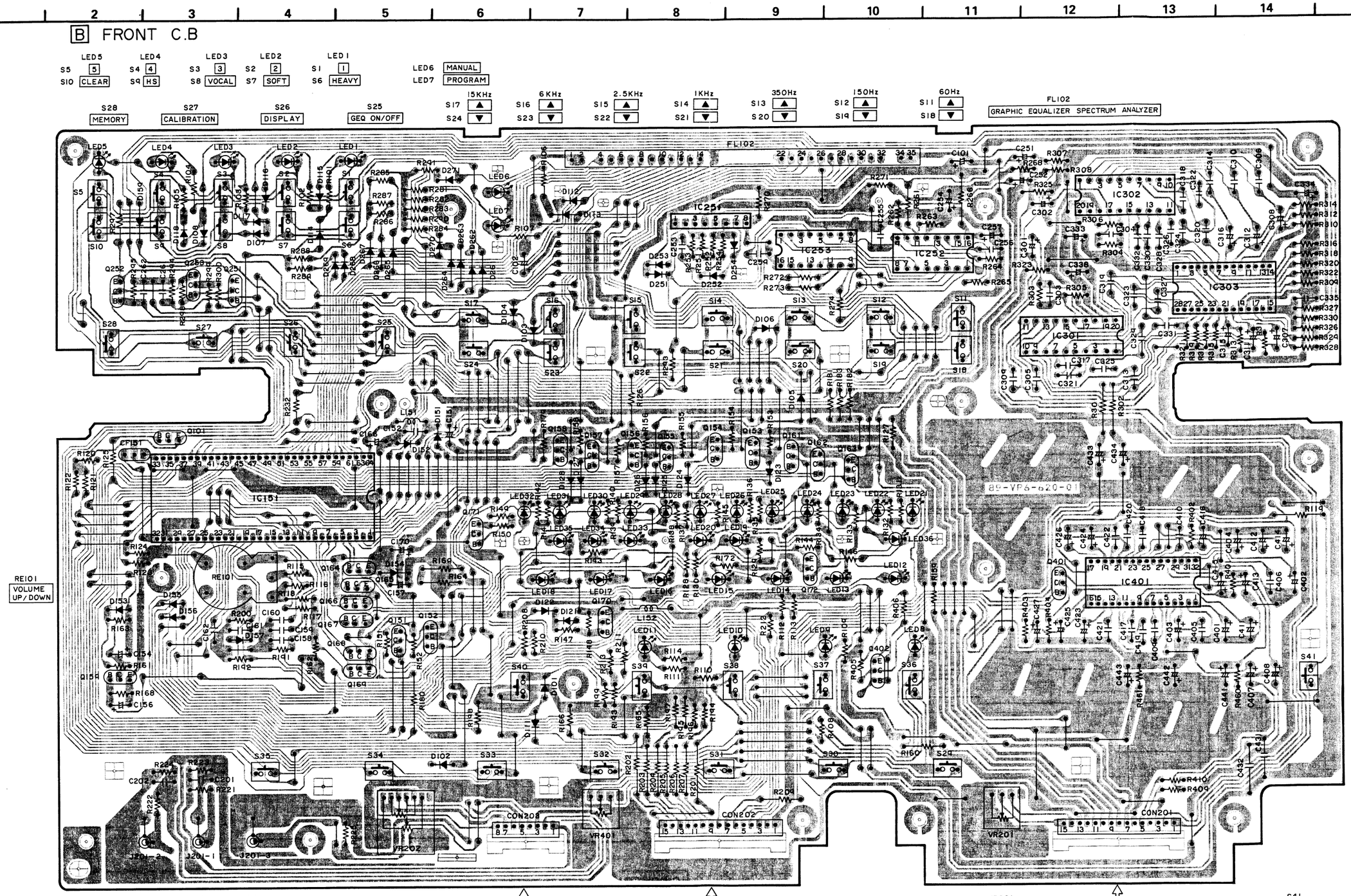
CONTROL INPUT B	CONTROL INPUT A	ON SWITCH	FUNCTION
0	0	×0	DIRECT-REC
0	1	×1	(MUTE)
1	0	×2	NORMAL-REC
1	1	×3	(MUTE)

O-$\overline{\text{EQ-REQ}}$ O-INPUT (Usually 0)

B FRONT C.B


IC252 BAND PASS FILTER (SPEANA BPF)
IC253 BAND PASS FILTER SWITCHING
IC251 LEVEL AMP
IC301, IC302 GRAPHIC EQUALIZER
IC303 LC7522
IC303 ELECTRIC VR CONTROL
IC401 XRC 5424 BBE
IC151 LC6568H-4317 SYSTEM CONTROLLER
IC301 LA3607
IC302 LA3607
LED36 MUTE/WAKE UP
LED35 VIDEO-3
LED34 VIDEO-2
LED33 VIDEO-1
LED19 LED20 REMOTE BALANCE LEFT RIGHT
LED12 TAPE
LED13 TUNER
LED14 PHONO
LED15 CD
LED16 VIDEO-1/DAT
LED17 VIDEO-2
LED18 VIDEO-3
LED01~LED18 SLZ381C×7
LED19~LED20 SLZ981C-02×2
LED21~LED32 SLZ981C-02×12
VOLUME INDICATOR 0~MAX
Q161~Q169 LED DRIVE
Q170~Q172 LED DRIVE
FL102 GRAPHIC EQUALIZER/SPECTRUM analyzer
SC 60Hz 150Hz 350Hz 1KHz 2.5KHz 6KHz 15KHz LEVEL
Q251, Q252 COMPARATOR
Q253 2SA1015 GR SWITCH
RE101 ROTARY ENCODER VOLUME
Q101 LED CONTROL
Q151~Q158 GRID DRIVER
Q159 HOLD CONTROL
O-COMP A·B·C
COMP-OUT
I-COMP
GEQ-CONT
GEQ-OUT·R
GEQ-OUT·L
POWER STANDBY/ON
KEY-0
KEY-1
KEY-2
KEY-3
KEY-4
CD/DAT DIRECT
SURROUND
BBE
PHONO
DIRECT RECORDING
CD
MUTING (WAKE UP)
TAPE
TUNER
6KHZ
4KHZ
60HZ
HEAVY
15KHZ
150HZ
SOFT
GEQ ON/OFF
DISP
CARIB-RATION
1KHZ
2.5KHZ
VOCAL
MEMORY
350HZ
HS
CLEAR
PROGRAM
MANUAL
7/BEAT
2/SOFT
3/VOCAL
4/HS
5/CLEAR
VIDEO-3 J201-1 L
J201-2 R
J201-3 V
CON203
VIDEO-3 LCH
VIDEO-3 RCH
VIDEO-3 A-GND
VIDEO-3 V
VIDEO-3 Ð-GND
ÐSL LCH
ÐSL COM
ÐSL RCH
TO A MAIN C.B PIN953
CON202
VCC (+9V)
O-POWER
O-SURROUND
O-EVR
I-POWER
COMP-OUT
I-REMOCON
I/O-SERIAL
O-CLK
O-DATA
O-INPUT
O-VIDEO-2
O-VIDEO-3
O-EQ-REC
TO A MAIN C.B PIN952
CON201
OUT LCH
OUT RCH
+VM (+12V)
IN LCH
IN RCH
A-GND
-VCC (-8.5V)
AC-F2
AC-F1
-VFL (-31V)
RESET
Ð-GND
A-GND
MIC-OUT
MIC-IN
TO A MAIN C.B PIN951
VR202 ÐSL
VR201 MIC MIXING
AUDIO SIGNAL
VIDEO SIGNAL

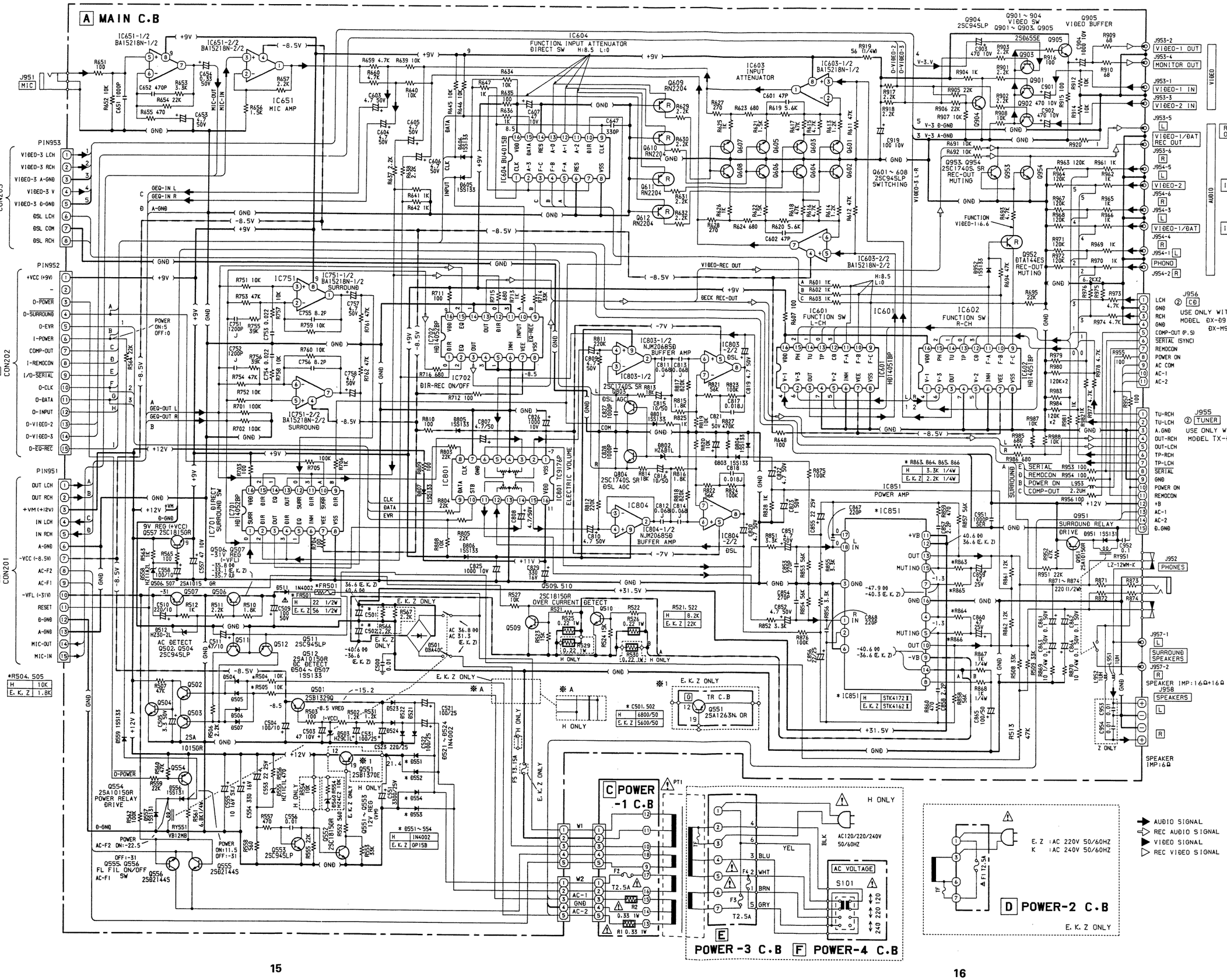
B FRONT C.B

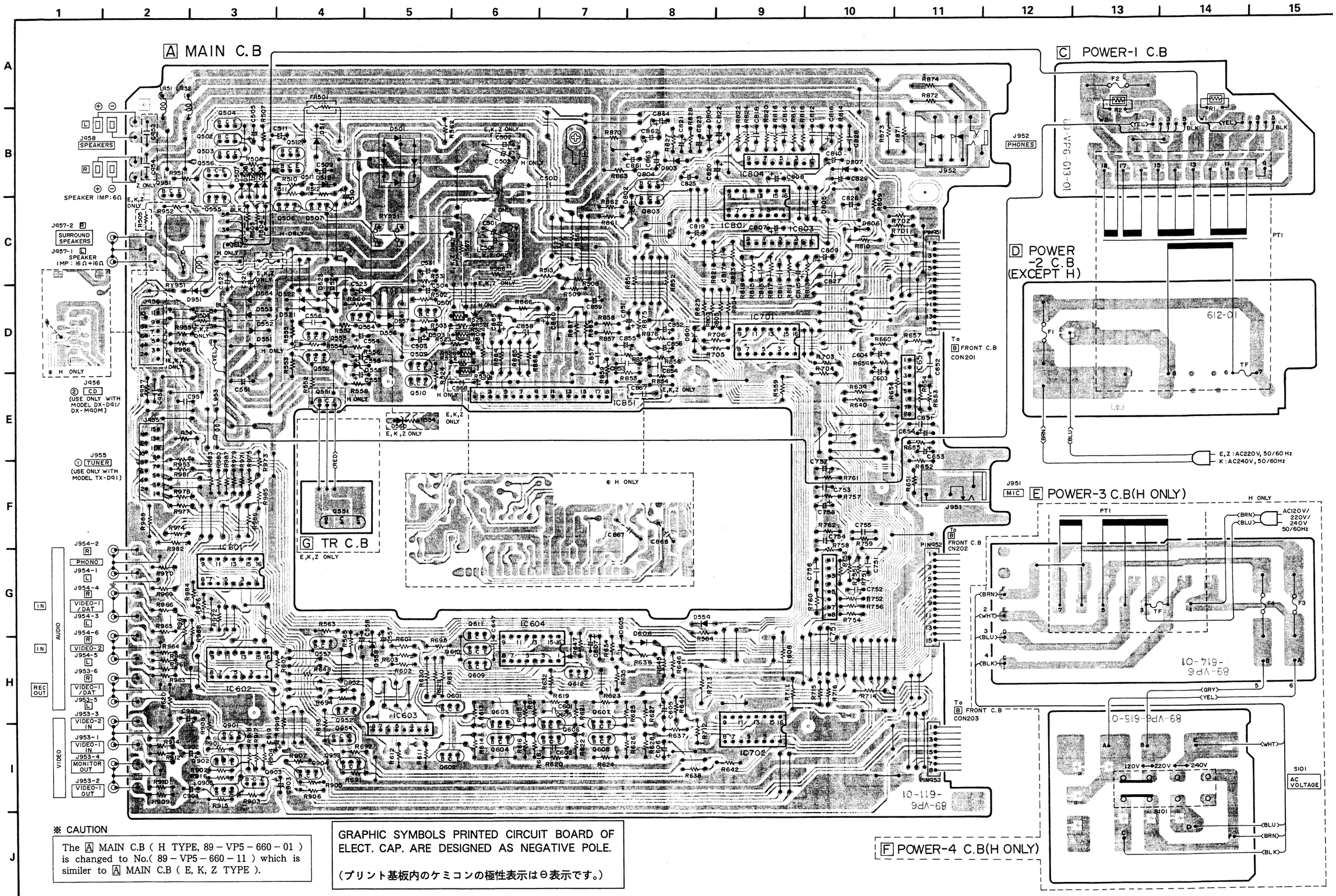


GRAPHIC SYMBOLS PRINTED CIRCUIT BOARD OF ELECT. CAP. ARE DESIGNED AS NEGATIVE POLE.

（プリント基板内のケミコンの極性表示はⓇ表示です。）

SCHEMATIC DIAGRAM – 2 (MX – D86M)





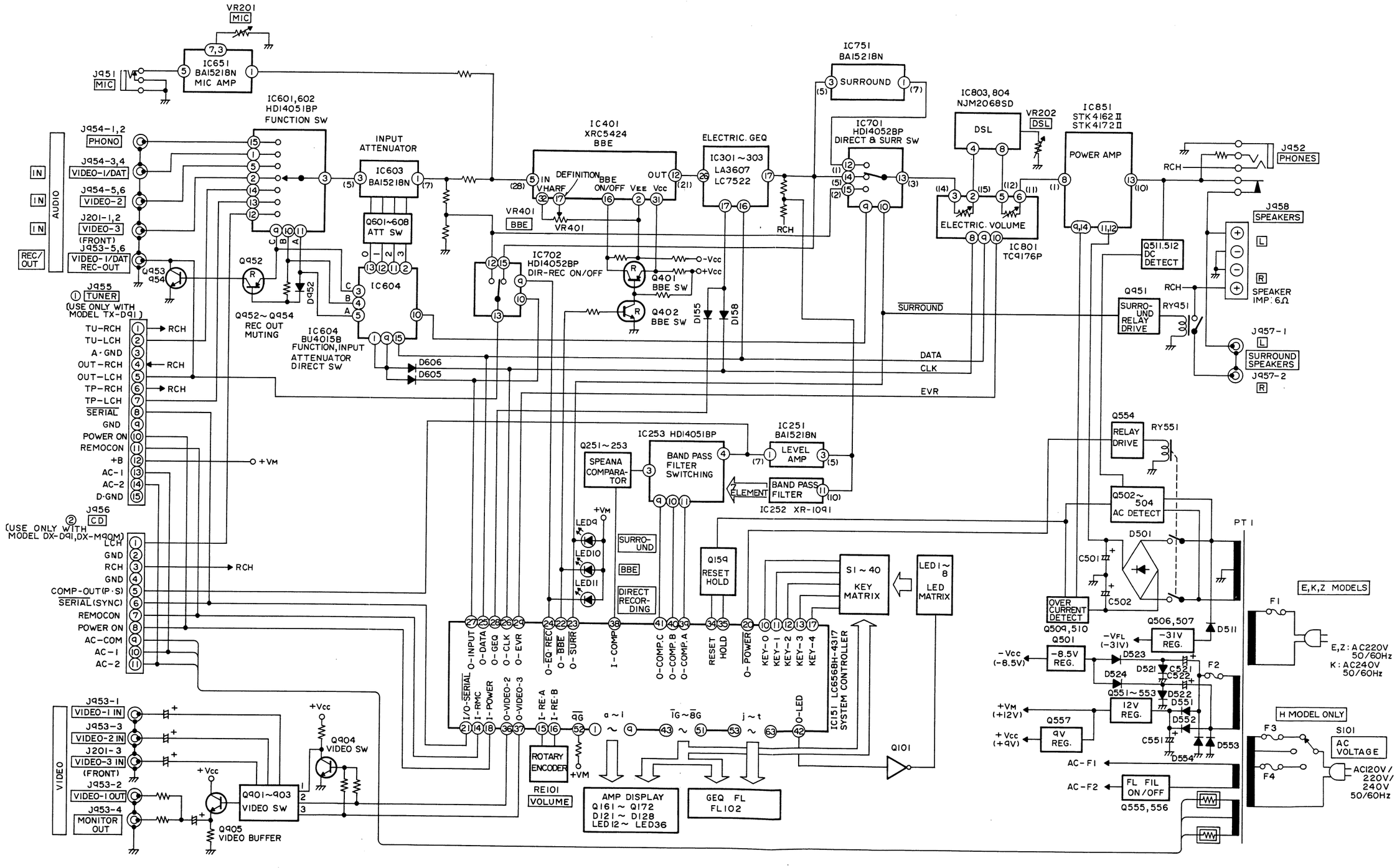
※ CAUTION

The A MAIN C.B (H TYPE, 89 – VP5 – 660 – 01) is changed to No.(89 – VP5 – 660 – 11) which is similer to A MAIN C.B (E, K, Z TYPE).

GRAPHIC SYMBOLS PRINTED CIRCUIT BOARD OF ELECT. CAP. ARE DESIGNED AS NEGATIVE POLE.

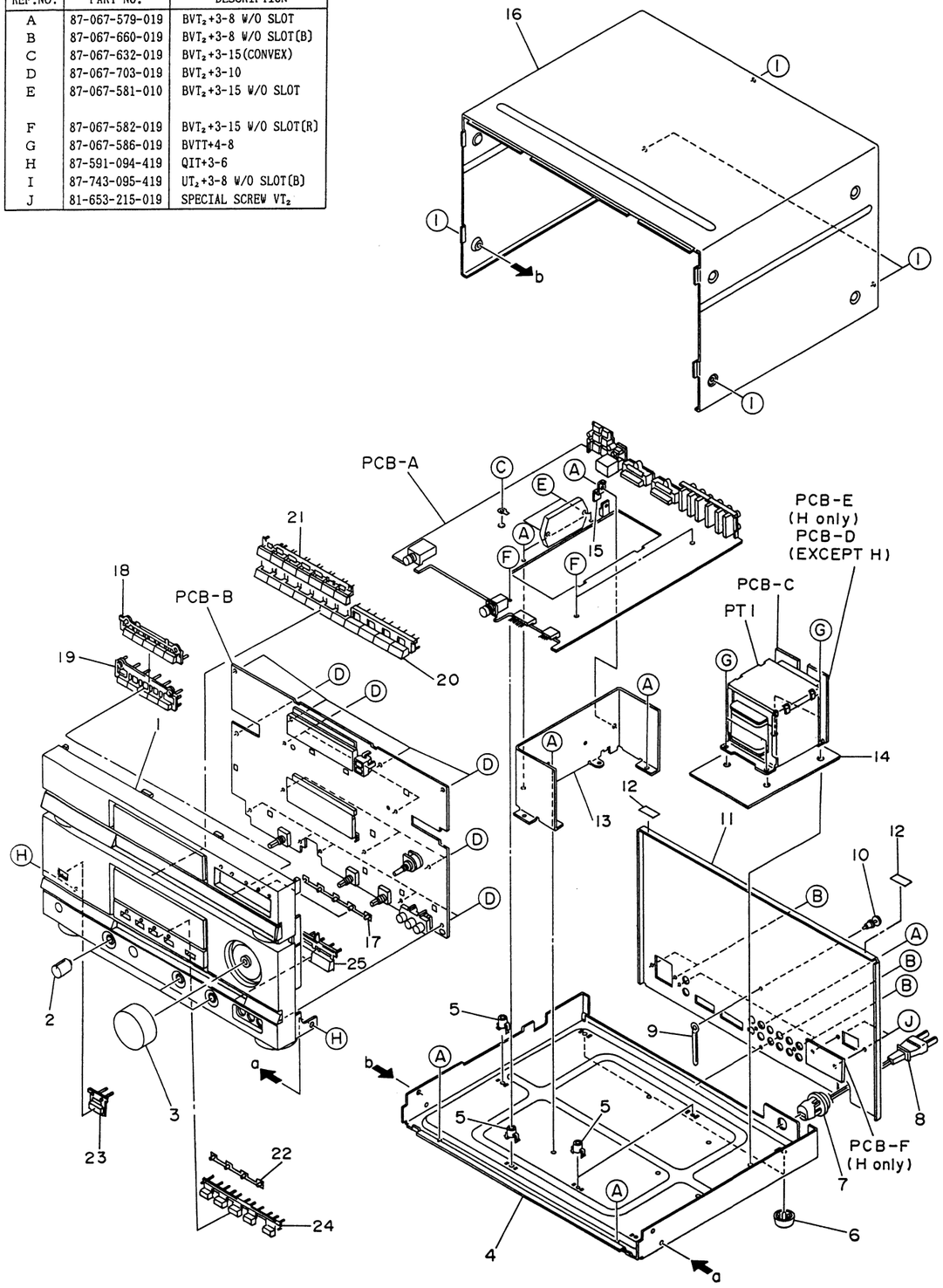
(プリント基板内のケミコンの極性表示はθ表示です。)

BLOCK DIAGRAM (MX – D86M)



EXPLODED VIEW (MX – D86M)

REF.NO.	PART NO.	DESCRIPTION
A	87-067-579-019	BVT_2+3-8 W/O SLOT
B	87-067-660-019	BVT_2+3-8 W/O SLOT(B)
C	87-067-632-019	BVT_2+3-15(CONVEX)
D	87-067-703-019	BVT_2+3-10
E	87-067-581-010	BVT_2+3-15 W/O SLOT
F	87-067-582-019	BVT_2+3-15 W/O SLOT(R)
G	87-067-586-019	BVTT+4-8
H	87-591-094-419	QIT+3-6
I	87-743-095-419	UT_2+3-8 W/O SLOT(B)
J	81-653-215-019	SPECIAL SCREW VT_2



MECHANICAL PARTS LIST (MX – D86M)

PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q'TY
	1	*09-047-568-010	CABINET FRONT ASSY(86 H)	*	1
	1	*09-047-569-010	CABINET FRONT ASSY(86M H)	*	1
	1	*09-047-570-010	CABINET FRONT ASSY(86M E,K,Z)	*	1
	2	*89-VP5-006-010	KNOB,ROTARY DSL		3
	3	*89-VP5-005-019	KNOB,ROTARY VOLUME		1
	4	89-VP5-213-210	CHASSIS,MAIN		1
	5	*81-664-202-010	HOLDER,PCB		4
	6	*87-085-213-019	FOOT,H12.5		2
	7	*87-085-185-010	BUSHING,AC CORD		1
	8	*82-187-797-019	AC CORD E(EXCEPT K)		1
	8	*82-187-796-019	AC CORD K(K)		1
	9	---	WIRE,BINDER		1
	10	*87-084-077-010	RIVET,NYLON DIA 3.5-4.5		1
	11	*89-VP6-003-010	PANEL,REAR(86 H)	*	1
	11	*89-VP6-012-010	PANEL,REAR(86 HJ)	*	1
	11	*89-VP6-017-010	PANEL,REAR(86M H)	*	1
	11	*89-VP6-018-010	PANEL,REAR(86M HJ)	*	1
	11	*89-VP6-010-010	PANEL,REAR(86M E)	*	1
	11	*89-VP6-011-010	PANEL,REAR(86M K)	*	1
	11	*89-VP6-005-010	PANEL,REAR(86M Z)	*	1
	12	*82-197-259-019	SHEET,PVC 4-12		2
	13	---	HEAT SINK		1
	14	---	SHIELD,PT		1
	15	*89-VP5-206-019	HOLDER,IC(H)		1
	16	*89-VP5-027-010	CABINET,STEEL		1
	17	*89-VP5-017-019	GUIDE,LIGHT GE1		1
	18	*89-VT5-004-019	BUTTON,TUNING PRESET 1		1
	19	*89-VT5-008-010	BUTTON,GE PRESET 2		1
	20	*89-VP5-010-010	BUTTON,GE DOWN		1
	21	*89-VP5-009-010	BUTTON,GE UP		1
	22	*89-VP5-025-010	GUIDE,LIGHT DI		1
	23	*89-VP5-011-019	BUTTON,POWER		1
	24	*89-VP5-026-019	BUTTON,DI		1
	25	*89-VP5-013-010	BUTTON,FUNCTION		1

MODEL NO.

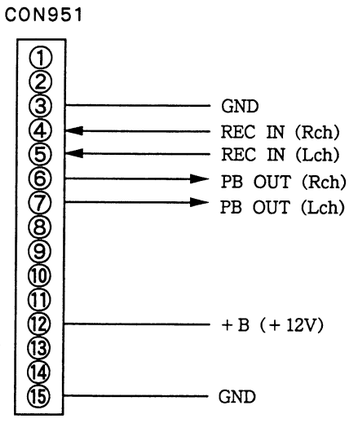
FX – W86／W868

CAUTIONS WHEN SERVICING (FX – W86／W868)

Model FX – W86／W868 does not have a power supply circuit.
Power is supplied to it through a 15 – pin flat cable and the signal inputs／outputs are also performed through this cable.
When servicing the FX – W86／W868 connect it to the MX – D86／D86M so power is supplied to the FX – W86／W868.
If the MX – D86／D86M is not available, follow the procedure below.

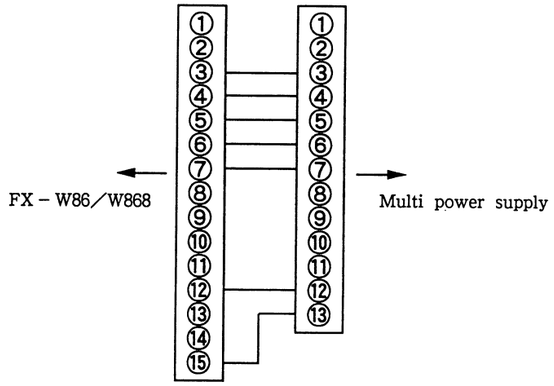
[When servicing the unassembled FX – W86／W868]

① Supply the following voltages to each terminal from an external power supply.

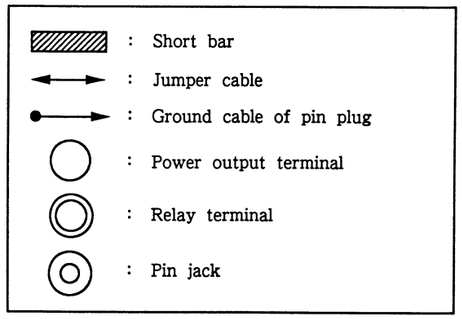


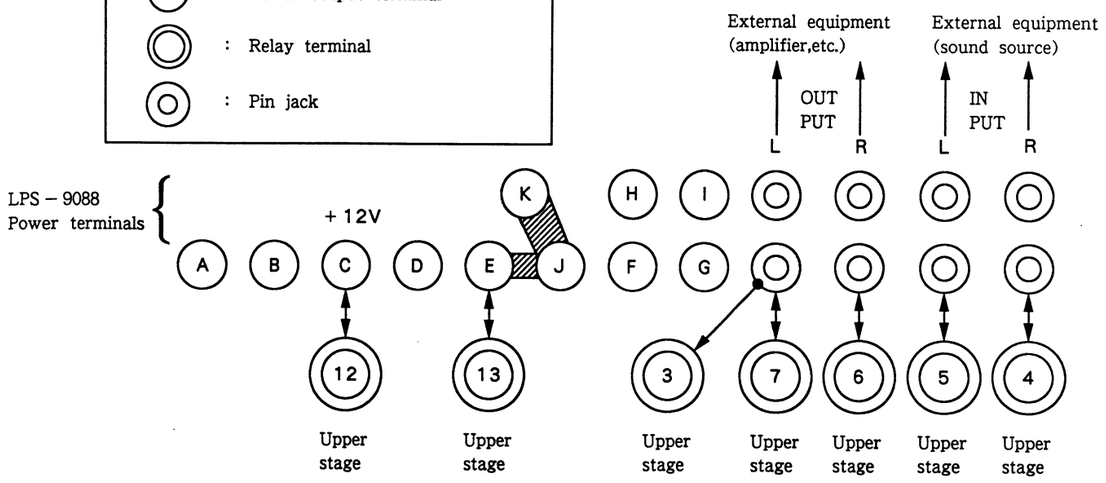
② Connection diagram when using multi power supply (LPS – 9088)

• Connect a multi – conversion harness for the Model CU – D86 to J1.



Connect a multi – conversion harness



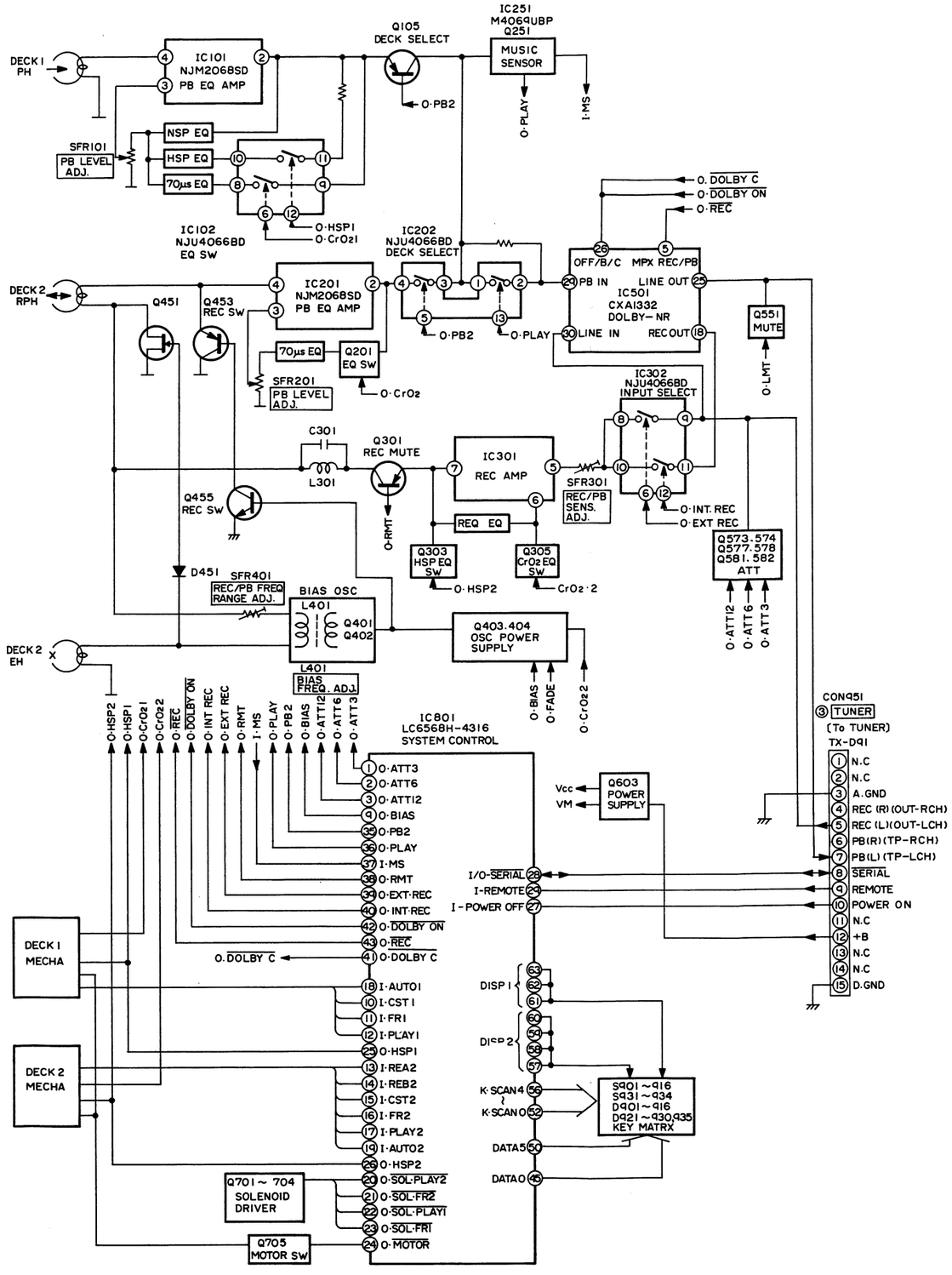


ELECTRICAL MAIN PARTS LIST (FX – W86／W868)

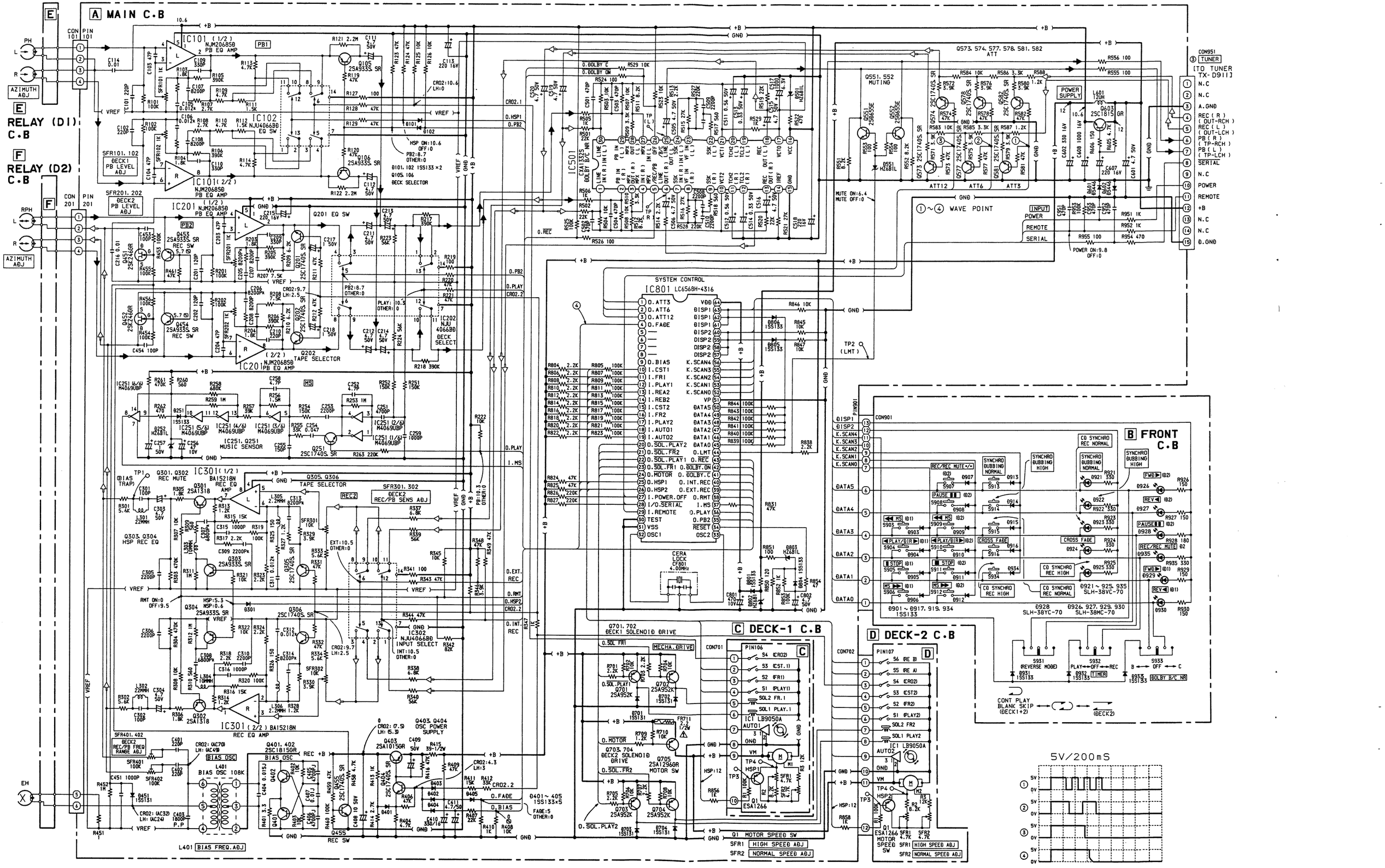
REF.NO.	PART NO.	DESCRIPTION
=== IC ===		
	87-001-440-019	IC,BA15218N
	87-001-908-010	IC,CXA1332S
	S6-804-060-020	IC,LB9050A
	89-VW6-601-010	IC,LC6568H-4316
	87-020-533-019	IC,M4069UBP
	87-020-758-019	IC,NJM2068SD
	87-020-908-019	IC,NJU4066BD
=== TRANSISTOR ===		
	89-502-465-019	FET,2SK246GR
	87-026-463-019	TRANSISTOR,2SA933S(SR)
	89-109-521-019	TRANSISTOR,2SA952K
	89-110-155-019	TRANSISTOR,2SA1015GR
	89-112-965-019	TRANSISTOR,2SA1296GR
	89-113-187-819	TRANSISTOR,2SA1318
	87-026-462-019	TRANSISTOR,2SC1740S(SR)
	89-318-155-019	TRANSISTOR,2SC1815GR
	89-406-555-019	TRANSISTOR,2SD655E
	S6-804-050-040	TRANSISTOR,ESA1266
=== DIODE ===		
	87-001-559-019	DIODE,1SS131
	87-020-465-019	DIODE,1SS133
	87-020-123-019	DIODE,DS446-AT
	87-027-475-019	DIODE,ZENER HZ6B1
	87-027-332-019	DIODE,ZENER HZ6B1L
=== MAIN CIRCUIT BOARD SECTION ===		
C101	★87-018-123-019	CAP,CERA-SOL SS 220P-50
C102	★87-018-123-019	CAP,CERA-SOL SS 220P-50
C103	★87-018-115-019	CAP,CERA-SOL SS 47P-50 SL
C104	★87-018-115-019	CAP,CERA-SOL SS 47P-50 SL
C111	★87-010-404-019	CAP,ELECT 4.7-50 SME
C112	★87-010-404-019	CAP,ELECT 4.7-50 SME
C113	★87-010-101-019	CAP,ELECT 220-16 SME
C114	★87-018-134-019	CAP,CERA-SOL SS 0.01-16
C201	★87-018-120-019	CAP,CERA-SOL SS 330P-50
C202	★87-018-120-019	CAP,CERA-SOL SS 330P-50
C203	★87-018-115-019	CAP,CERA-SOL SS 47P-50 SL
C204	★87-018-115-019	CAP,CERA-SOL SS 47P-50 SL
C209	★87-018-123-019	CAP,CERA-SOL SS 220P-50
C210	★87-018-123-019	CAP,CERA-SOL SS 220P-50
C211	★87-010-404-019	CAP,ELECT 4.7-50 SME
C212	★87-010-404-019	CAP,ELECT 4.7-50 SME
C213	★87-010-404-019	CAP,ELECT 4.7-50 SME
C214	★87-010-404-019	CAP,ELECT 4.7-50 SME
C215	★87-010-101-019	CAP,ELECT 220-16 SME
C216	★87-018-134-019	CAP,CERA-SOL SS 0.01-16
C217	★87-010-401-019	CAP,ELECT 1-50 SME
C218	★87-010-401-019	CAP,ELECT 1-50 SME
C251	★87-018-133-019	CAP,CERA-SOL SS 4700P-16
C252	★87-018-100-019	CAP,CERA-SOL SS 4.7P-50 SL
C253	★87-018-132-019	CAP,CERA-SOL SS 2200P-16
C255	★87-018-121-019	CAP,CERA-SOL SS 150P-50
C256	★87-010-374-019	CAP,ELECT 47-10
C257	★87-010-401-019	CAP,ELECT 1-50 SME
C258	★87-018-100-019	CAP,CERA-SOL SS 4.7P-50 SL
C259	★87-018-131-019	CAP,CERA-SOL SS 1000P-50
C301	★87-018-119-019	CAP,CEAR-SOL SS 100P-50
C302	★87-018-119-019	CAP,CEAR-SOL SS 100P-50
C303	★87-010-404-019	CAP,ELECT 4.7-50 SME
C304	★87-010-404-019	CAP,ELECT 4.7-50 SME
C305	★87-018-132-019	CAP,CERA-SOL SS 2200P-16
C306	★87-018-132-019	CAP,CERA-SOL SS 2200P-16
C315	★87-018-131-019	CAP,CERA-SOL SS 1000P-50
C316	★87-018-131-019	CAP,CERA-SOL SS 1000P-50
C401	★87-018-123-019	CAP,CERA-SOL SS 220P-50
C402	★87-018-123-019	CAP,CERA-SOL SS 220P-50
C403	★87-014-063-019	CAP,PP 1800P
C408	★87-010-405-019	CAP,ELECT 10-50 SME
C409	★87-010-401-019	CAP,ELECT 1-50 SME
C410	★87-010-381-019	CAP,ELECT 330-16 SME
C411	★87-010-404-019	CAP,ELECT 4.7-50 SME
C451	★87-018-131-019	CAP,CERA-SOL SS 1000P-50
C453	★87-018-119-019	CAP,CEAR-SOL SS 100P-50
C454	★87-018-119-019	CAP,CEAR-SOL SS 100P-50
C501	★87-018-127-019	CAP,CERA-SOL SS 470P-50
C502	★87-018-127-019	CAP,CERA-SOL SS 470P-50
C503	★87-018-127-019	CAP,CERA-SOL SS 470P-50
C504	★87-018-127-019	CAP,CERA-SOL SS 470P-50
C505	★87-010-404-019	CAP,ELECT 4.7-50 SME
C506	★87-010-404-019	CAP,ELECT 4.7-50 SME
C507	★87-018-132-019	CAP,CERA-SOL SS 2200P-16
C508	★87-018-132-019	CAP,CERA-SOL SS 2200P-16
C509	★87-018-132-019	CAP,CERA-SOL SS 2200P-16
C510	★87-018-132-019	CAP,CERA-SOL SS 2200P-16
C511	★87-010-808-019	CAP,ELECT 0.56-50 SME
C512	★87-010-808-019	CAP,ELECT 0.56-50 SME
C513	★87-010-546-019	CAP,ELECT 0.33-50 SME
C514	★87-010-546-019	CAP,ELECT 0.33-50 SME
C515	★87-010-404-019	CAP,ELECT 4.7-50 SME
C516	★87-010-404-019	CAP,ELECT 4.7-50 SME
C517	★87-010-252-019	CAP,ELECT 1000-6.3
C518	★87-010-101-019	CAP,ELECT 220-16 SME
C519	★87-010-404-019	CAP,ELECT 4.7-50 SME
C520	★87-010-404-019	CAP,ELECT 4.7-50 SME
C601	★87-010-404-019	CAP,ELECT 4.7-50 SME
C602	★87-010-381-019	CAP,ELECT 330-16 SME
C607	★87-010-101-019	CAP,ELECT 220-16 SME
C608	★87-010-237-019	CAP,ELECT 1000-16
C801	★87-010-221-019	CAP,ELECT 470-10
C802	★87-010-404-019	CAP,ELECT 4.7-50 SME
CF801	★87-030-167-019	CERA LOCK CST4.0MHZ
⚠FR711	87-029-019-019	RES,FUSE 2.2-1/2W
L301	★82-231-629-019	COIL 22MMH
L302	★82-231-629-019	COIL 22MMH
L303	★87-003-131-019	COIL 10MMH
L304	★87-003-131-019	COIL 10MMH
L305	★87-003-123-019	COIL 2.2MMH
L306	★87-003-123-019	COIL 2.2MMH
L401	★81-693-608-119	COIL OSC BIAS 108K
L601	★87-003-060-019	COIL 12UH
SFR101	★87-024-168-019	SFR 1K
SFR102	★87-024-168-019	SFR 1K
SFR201	★87-024-168-019	SFR 1K
SFR202	★87-024-168-019	SFR 1K
SFR301	★87-024-172-019	SFR 10K
SFR302	★87-024-172-019	SFR 10K
SFR401	★87-024-176-019	SFR 100K
SFR402	★87-024-176-019	SFR 100K
=== FRONT CIRCUIT BOARD SECTION ===		
C951	★87-018-127-019	CAP,CERA-SOL SS 470P-50
C952	★87-018-127-019	CAP,CERA-SOL SS 470P-50
C953	★87-018-127-019	CAP,CERA-SOL SS 470P-50
D921	89-VW5-607-019	LED SLH-38VC(SYNC.DUBB.NORM.)

REF.NO.	PART NO.	DESCRIPTION
D922	89-VW5-607-019	LED SLH-38VC(SYNC.DUBB.HIGH)
D923	89-VW5-607-019	LED SLH-38VC(CD.SYNC REC NORM.)
D924	89-VW5-607-019	LED SLH-38VC(CROSS FADE)
D925	89-VW5-607-019	LED SLH-38VC(CD.SYNC REC HIGH)
D926	89-VW5-606-019	LED SLH-38MC(FWD,D2)
D927	89-VW5-606-019	LED SLH-38MC(REV,D2)
D928	89-VW5-608-019	LED SLH-38YC(PAUSE,D2)
D929	89-VW5-606-019	LED SLH-38MC(FWD,D1)
D930	89-VW5-606-019	LED SLH-38MC(REV,D1)
D935	89-VW5-607-019	LED SLH-38VC(REC/REC MUTE,D2)
S903	87-036-142-019	TACT SW(◀◀ MS,D1)
S904	87-036-142-019	TACT SW(PLAY/DIR,D1)
S905	87-036-142-019	TACT SW(STOP,D1)
S906	87-036-142-019	TACT SW(MS▶▶,D1)
S907	87-036-142-019	TACT SW(REC/REC MUTE,D2)
S908	87-036-142-019	TACT SW(PAUSE,D2)
S909	87-036-142-019	TACT SW(MS◀◀,D2)
S910	87-036-142-019	TACT SW(PLAY/DIR,D2)
S911	87-036-142-019	TACT SW(STOP,D2)
S912	87-036-142-019	TACT SW(MS▶▶,D2)
S913	87-036-142-019	TACT SW(SYNC.DUBB.NORM.)
S914	87-036-142-019	TACT SW(SYNC.DUBB.HIGH)
S915	87-036-142-019	TACT SW(SYNC.REC.NORM.)
S916	87-036-142-019	TACT SW(CROSS FADE)
S931	87-036-087-019	SLIDE SW(REV MODE)
S932	87-036-087-019	SLIDE SW(TIMER)
S933	87-036-087-019	SLIDE SW(DOLBY-B/C NR)
S934	87-036-142-019	TACT SW(CD SYNC.REC HIGH)
═══ DECK-1 CIRCUIT BOARD SECTION ═══		
S1	S6-401-011-740	LEAF SW(PLAY)
S2	S6-401-011-750	LEAF SW(FR)
S3	S6-401-011-730	LEAF SW(CST)
S4	S6-401-011-730	LEAF SW(CRO2)
SFR1	*S6-816-010-010	SFR 4.7K
SFR2	*S6-816-010-010	SFR 4.7K
SOL1	S1-880-210-130	SOLENOID(PLAY)
SOL2	S1-880-210-130	SOLENOID(F/R)
═══ DECK-2 CIRCUIT BOARD SECTION ═══		
S1	S6-401-011-740	LEAF SW(PLAY)
S2	S6-401-011-750	LEAF SW(FR)
S3	S6-401-011-730	LEAF SW(CST)
S4	S6-401-011-730	LEAF SW(CRO2)
S5	S6-401-011-730	LEAF SW(REA)
S6	S6-401-011-730	LEAF SW(REB)
SFR1	*S6-816-010-010	SFR 4.7K
SFR2	*S6-816-010-010	SFR 4.7K
SOL1	S1-880-210-130	SOLENOID(PLAY)
SOL2	S1-880-210-130	SOLENOID(F/R)
═══ RELAY(D1) CIRCUIT BOARD SECTION ═══		
═══ RELAY(D2) CIRCUIT BOARD SECTION ═══		
═══ MISCELLANEOUS ═══		
CON951	89-VW5-610-110	CORD,FG 15P(3.TUNER)
M1	S6-005-030-420	MOTOR MMI-6H2LWK(D1)
M2	S6-005-030-420	MOTOR MMI-6H2LWK(D2)
PH	S6-204-070-090	PB HEAD(D1)
RPEH	S6-204-040-010	R/P/E,HEAD(D2)

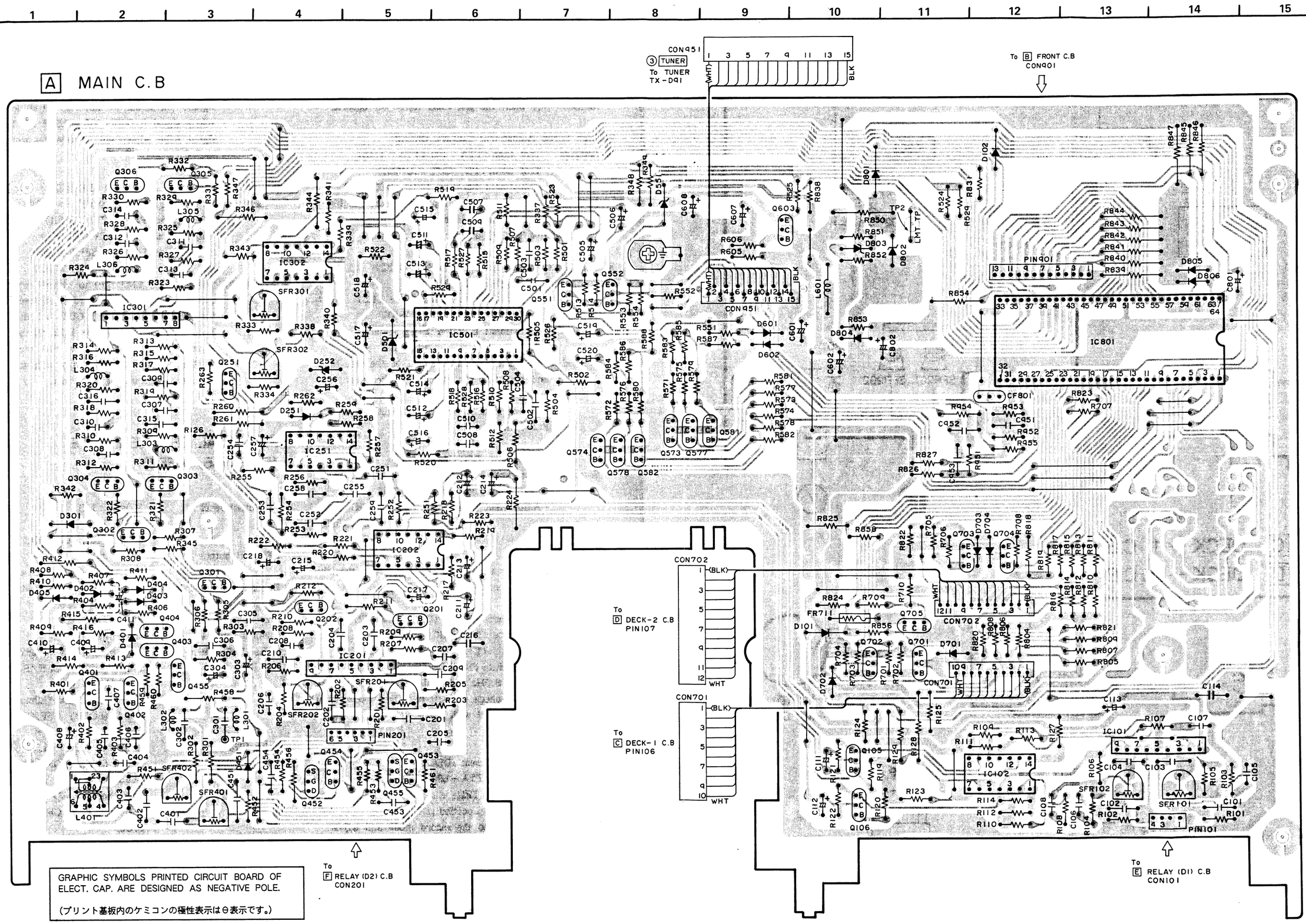
BLOCK DIAGRAM (FX – W86/W868)

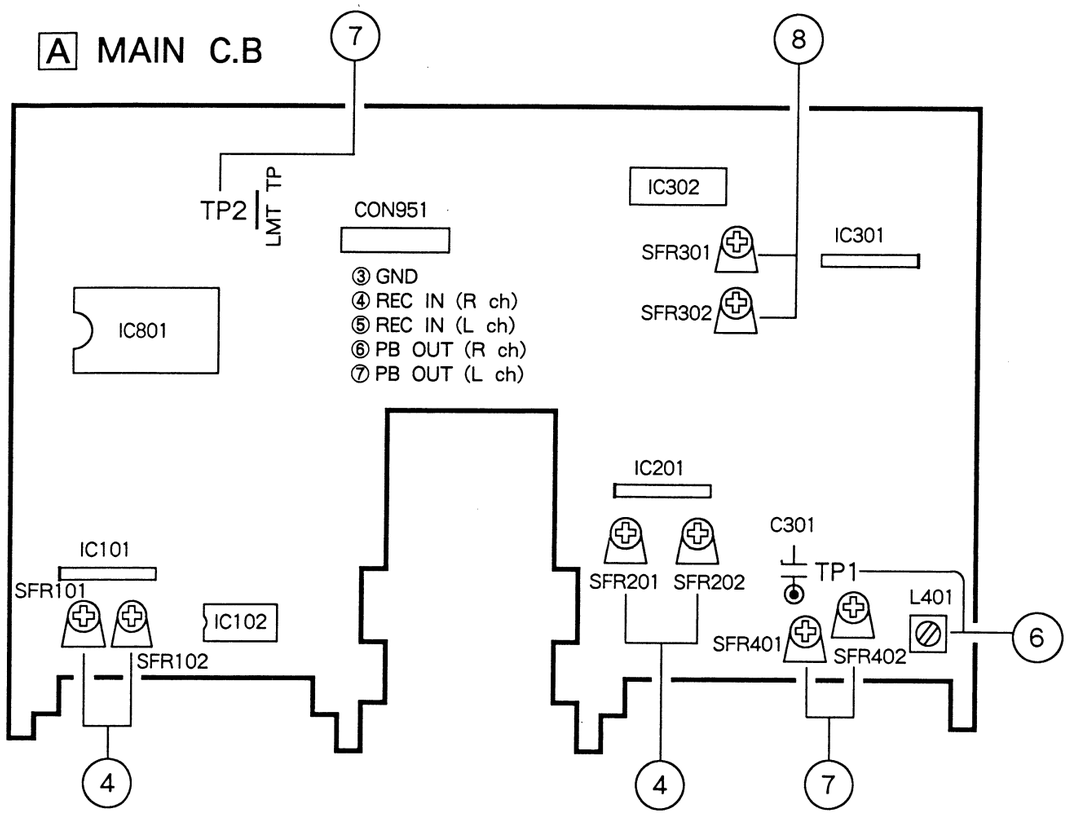


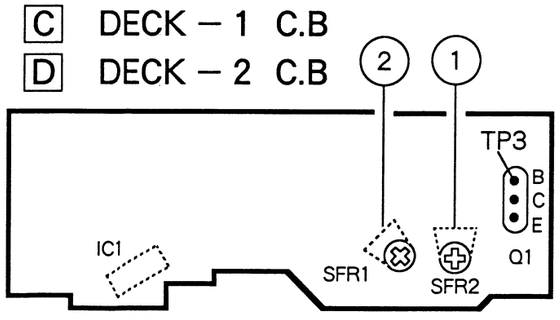
SCHEMATIC DIAGRAM (FX – W86/W868)

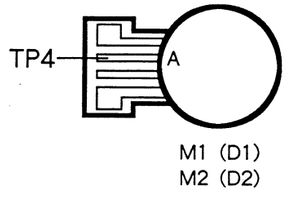


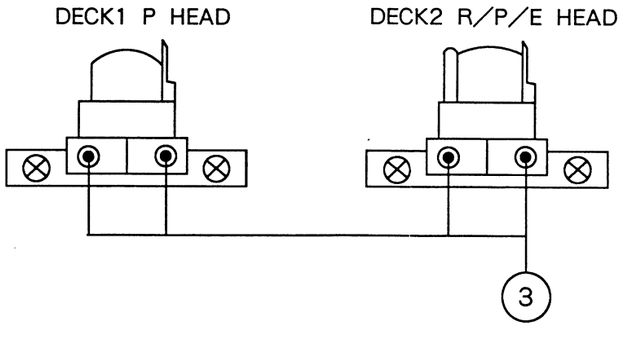
A MAIN C.B


CON951
3 TUNER
To TUNER TX-D91
To B FRONT C.B CON901
To D DECK-2 C.B PIN107
To C DECK-1 C.B PIN106
To F RELAY (D2) C.B CON201
To E RELAY (D1) C.B CON101
CON702
CON701
IC301
IC302
IC501
IC251
IC202
IC201
IC801
IC101
IC102
PIN201
PIN901
PIN101
SFR301
SFR302
SFR202
SFR201
SFR401
SFR402
SFR102
SFR101
TP1
TP2
L401
GRAPHIC SYMBOLS PRINTED CIRCUIT BOARD OF ELECT. CAP. ARE DESIGNED AS NEGATIVE POLE.
(プリント基板内のケミコンの極性表示はθ表示です。)









1. Normal Speed Adjustment (DECK1, DECK2)
   Settings : • Test tape : TTA – 100 (TTA – 111S)
   • Test point : PB – OUT (CON951)
   • Adjustment Location : SFR2 (DECK1, 2)
   Method : Play back the test tape, adjust for 3000Hz.

2. High Speed Adjustment (DECK1, DECK2)
   Settings : • Test tape : TTA – 100 (TTA – 111S)
   • Test point : PB – OUT (CON951)
   • Adjustment Location : SFR1 (DECK1, 2)
   Method : Play back the test tape, and make the high speed condition to be shorted between TP3 and TP4. Adjust for 5400Hz ± 15Hz.

3. Head Azimuth Adjustment (DECK1, DECK2)
   Settings : • Test tape : TTS – 310
   (TTA – 317E, SCC – 1429)
   • Test point : PB – OUT (CON951)
   • Adjustment Location : Head azimuth adjustment screw
   Method : Play back the 10kHz signal of the test tape and adjust so that the output becomes maximum.
   Next, perform on each FWD PLAY and REV PLAY mode.

4. PB Level Adjustment (DECK1, DECK2)
   Settings : • Test tape : TTS – 200 (TTA – 161, TCC – 130)
   • Test point : PB – OUT (CON951)
   • Adjustment Location : SFR101 (DECK1, Lch)
   SFR102 (DECK1, Rch)
   SFR201 (DECK2, Lch)
   SFR202 (DECK2, Rch)
   Method : Play back the test tape and adjust so that the output becomes 300mV ± 20mV.

5. PB Frequency Response Check (DECK1, DECK2)
   Settings : • Test tape : TTS – 310
   (TTA – 317E, SCC – 1429)
   • Test point : PB – OUT (CON951)
   Method : Play the 315Hz and 10kHz signals of the test tape and check the output of the 10kHz signal is 0dB ± 2.5dB with respect to that of the 315Hz signal.

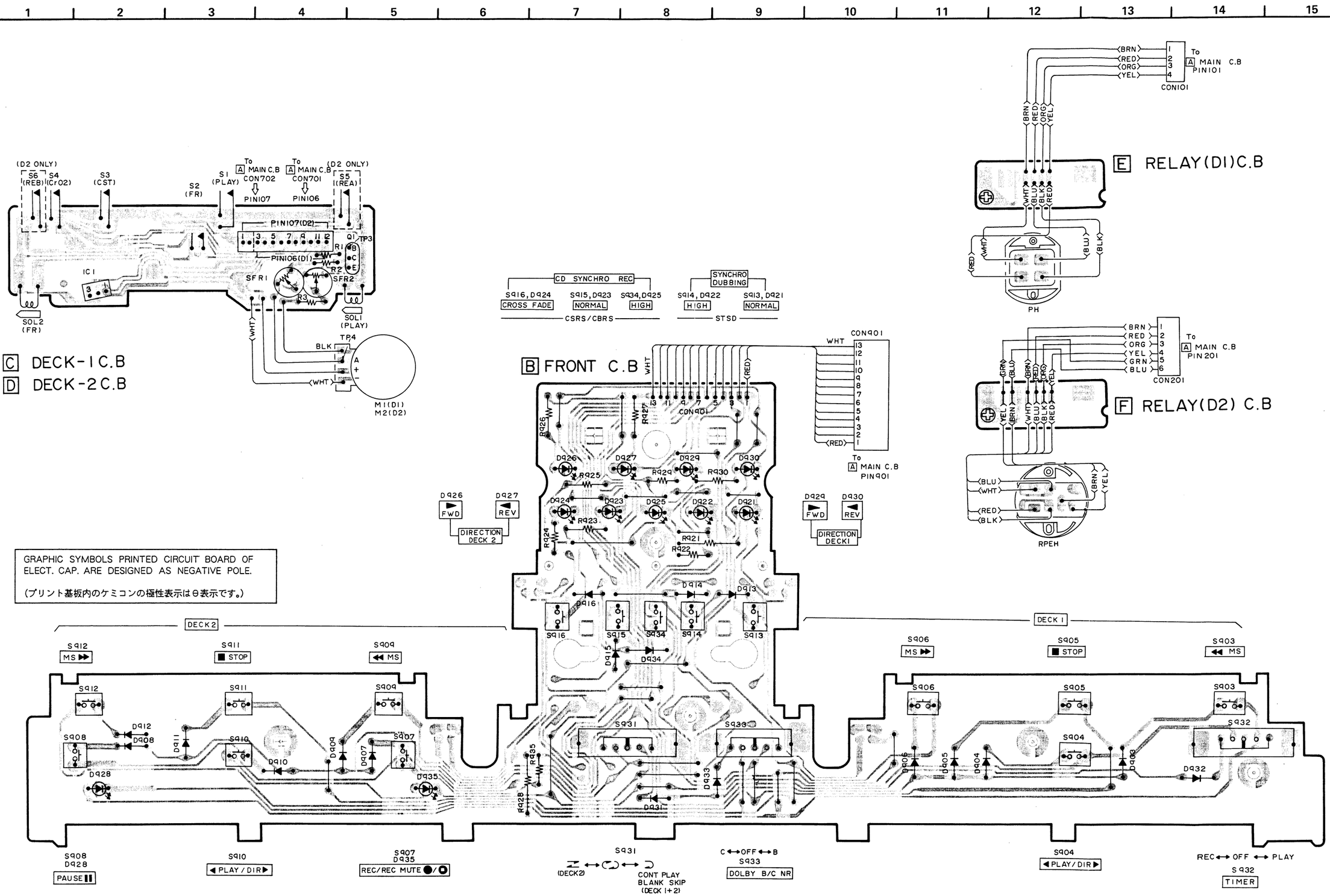
6. Bias Frequency Adjustment (DECK2)
   Settings : • Test tape : TTA – 600 (TTA – 119K)
   • Test point : TP1
   • Adjustment Location : L401
   Method : Set DECK2 to the record mode and adjust L401 so that the frequency at TP1 is 108kHz ± 1kHz.

7. REC/PB Frequency Response Adjustment (DECK2)
   Settings : • Test tape : TTA – 600 (TTA – 119K)
   • Test point : PB – OUT (CON951)
   • Input signal : REC – IN (CON951)
   • Adjustment Location : SFR401 (Lch)
   SFR402 (Rch)
   Method : Connect TP2 (LMT TP) to ground (chassis), apply a 1kHz signal and adjust attenuator so that the level at the PB OUT is 21mV.
   Record and play back the 1kHz and 10kHz signals and adjust so that the output level of 10kHz signal is 0dB + 2dB, – 0.5dB for 1kHz signal. After adjustment, remove the grounding lead wire.

8. REC/PB Sensitivity Adjustment (DECK2)
   Settings : • Test tape : TTA – 600 (TTA – 119K)
   • Test point : PB – OUT (CON951)
   • Input signal : REC – IN (CON951)
   • Adjustment Location : SFR301 (Lch)
   SFR302 (Rch)
   Method : Connect TP2 (LMT TP) to ground (chassis), apply a 1kHz signal and adjust attenuator so that the level at the PB OUT is 21mV.
   Record and play back the 1kHz signal and adjust SFR301 and SFR302 so that the output level of is 21mV ± 1.5dB. After adjustment, remove the grounding lead wire.

PRACTICAL SERVICE FIGURE (FX – W86/W868)

PB output level :	300mV ± 1dB TTS – 200 (TTA – 161, TCC – 130)
REC/PB output level :	210mV ± 1dB (PB OUT, – 16.5dBV 1kHz)
Distortion (REC/PB) :	Less than 2.0 % (NORM., CrO2)
Erasing ratio :	More than 60dB
Crosstalk :	More than 60dB
Channel separation :	More than 30dB
Noise (REC/PB) :	Less than 3.3mV/1.6mV/1.3mV (DOLBY OFF/B/C NORM.) Less than 2.2mV/1.3mV/1.0mV (DOLBY OFF/B/C CrO2)
Noise (PB) :	Less than 3.2mV/1.5mV/1.2mV (DOLBY OFF/B/C NORM.) Less than 2.2mV/1.2mV/1.0mV (DOLBY OFF/B/C CrO2)
Recording bias frequency :	108kHz
Tape speed :	3000Hz ± 1.5 %
Wow & flutter (W.RMS) :	Less than 0.135 % (DECK1, 2)
Take – up torque :	30~60g-cm (DECK1, 2)
F.F & REW torque :	55~120g-cm (DECK1, 2)
Back tension :	2~6g-cm (DECK1, 2)
Test tape :	NORMAL : TTA – 600 (TTA – 119K) CrO2 : TTA – 610 (TTA – 119H)


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
A B C D E F G H I J K
(D2 ONLY)
S6 (REB)
S4 (Cr02)
S3 (CST)
S2 (FR)
S1 (PLAY)
To A MAIN C.B CON702
To A MAIN C.B CON701
(D2 ONLY)
S5 (REA)
PIN107
PIN106
PIN107(D2)
PIN106(D1)
Q1
TP3
R1
R2
R3
IC1
SFR1
SFR2
SOL2 (FR)
SOL1 (PLAY)
TP4
BLK
WHT
M1(D1)
M2(D2)
C DECK-1 C.B
D DECK-2 C.B
CD SYNCHRO REC
S916, D924
CROSS FADE
S915, D923
NORMAL
S934, D925
HIGH
CSRS/CBRS
SYNCHRO DUBBING
S914, D922
HIGH
S913, D921
NORMAL
STSD
B FRONT C.B
CON901
To A MAIN C.B PIN901
D926 FWD
D927 REV
DIRECTION DECK 2
D929 FWD
D930 REV
DIRECTION DECK1
GRAPHIC SYMBOLS PRINTED CIRCUIT BOARD OF ELECT. CAP. ARE DESIGNED AS NEGATIVE POLE.
(プリント基板内のケミコンの極性表示はθ表示です。)
DECK 2
DECK 1
S912 MS ▶▶
S911 ■ STOP
S909 ◀◀ MS
S906 MS ▶▶
S905 ■ STOP
S903 ◀◀ MS
S908 D928 PAUSE ❚❚
S910 ◀ PLAY / DIR ▶
S907 D935 REC/REC MUTE
S931 (DECK2)
CONT PLAY BLANK SKIP (DECK 1+2)
C ↔ OFF ↔ B S933 DOLBY B/C NR
S904 ◀ PLAY/DIR ▶
REC ↔ OFF ↔ PLAY S932 TIMER
E RELAY(D1)C.B
CON101
To A MAIN C.B PIN101
PH
F RELAY(D2) C.B
CON201
To A MAIN C.B PIN201
RPEH

C DESCRIPTION (FX－W86／W868)

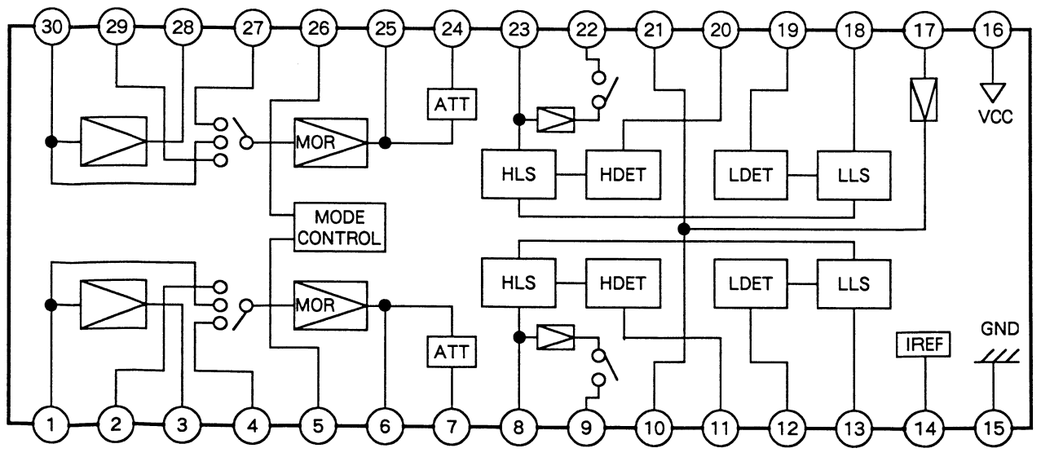
IC,LC6568H－4316

Pin No.	Pin Name	I／O	Description
1	O・ATT3	O	Input signal level control output from the cross fade. Active “H”.
2	O・ATT6	O	
3	O・ATT12	O	
4	O・FADE	O	DECK 2 Recording bias oscillation output at the CBRS and cross fade. Active “H”.
5	——	－	Not used.
6	——	－	
7	——	－	
8	——	－	
9	O・BIAS	O	DECK 2 Recording bias oscillation output. Goes “H” in the record and dubbing modes.
10	I・CST1	I	DECK 1 Cassette tape detection switching input. Goes “L” switch on.
11	I・FR1	I	DECK 1 FF and FWD detection switching input. Goes “L” FF or RWD switch on.
12	I・PLAY1	I	DECK 1 PLAY detection switching input. Goes “L” PLAY switch on.
13	I・REA2	I	DECK 2 Side A’s accidental erasure prevention switch input. Goes “L” when recording is possible.
14	I・REB2	I	DECK 2 Side B’s accidental erasure prevention switch input. Goes “L” when recording is possible.
15	I・CST2	I	DECK 2 Cassette tape detection switching input. Goes “L” switch on.
16	I・FR2	I	DECK 2 FF and RWD detection switching input. Goes “L” FF or RWD switch on.
17	I・PLAY2	I	DECK 2 PLAY detection switching input. Goes “L” PLAY switch on.
18	I・AUTO1	I	DECK 1 Reel disk pulse input.
19	I・AUTO2	I	DECK 2 Reel disk pulse input.
20	O・$\overline{\text{SOL・PLAY2}}$	O	DECK 2 PLAY solenoid drive output. Active “L”.
21	O・$\overline{\text{SOL・FR2}}$	O	DECK 2 FF and RWD solenoid drive output. Active “L”.
22	O・$\overline{\text{SOL・PLAY1}}$	O	DECK 1 PLAY solenoid drive output. Active “L”.
23	O・$\overline{\text{SOL・FR1}}$	O	DECK 1 FF and RWD solenoid drive output. Active “L”.
24	O・$\overline{\text{MOTOR}}$	O	DECK 1/2 Main motor control output. Goes “L” in the STOP mode.
25	O・HSP1	O	DECK 1 High speed control output. Goes “H” in the high speed dubbing mode.
26	O・HSP2	O	DECK 2 High speed control output. Goes “H” in the high speed dubbing mode. (Tape deck and CD)
27	I・POWER OFF	I	Power off signal input. Goes “L” when off.
28	I／O $\overline{\text{SERIAL}}$	I／O	CD and amplifier serial data input and output.
29	I・REMOTE	I	Remote control serial data input.
30	TEST	－	MPU test pin to be connected to VSS.
31	VSS	－	MPU I/O and power supply common pin.
32	OSC1	－	Pins to generate a 4MHz clock signal.
33	OSC2	－	
34	$\overline{\text{RESET}}$	I	MPU reset input. Goes “L” input resets the MPU.
35	O・PB2	O	DECK 1/2 PB output level control pin. Goes “H” in the DECK 2 PB.
36	O・PLAY	O	CUE/REVIEW muting and MS sensitivity switching output. Goes “H” PB.
37	I・MS	I	MS signal input. Active “H”.
38	O・RMT	O	Record muting output. Goes “H” in the REC mute, recording I/O and REC pause.
39	O・EXT・REC	O	DECK 2 Recording switching output. Goes “H” DECK 1 PB and DECK 2 REC.
40	O・INT・REC	O	DECK 2 Recording switching output. Goes “H” in the record and dubbing modes. Goes “L” in the O・EXT・REC “H”.
41	O・$\overline{\text{DOLBY C}}$	O	Dolby NR B/C switching output. Goes “H” Dolby C.
42	O・$\overline{\text{DOLBY ON}}$	－	Dolby NR ON/OFF switching output. Goes “H” Dolby on.
43	O・$\overline{\text{REC}}$	O	Dolby encode/decode switching output. Goes “H” REC, “L” dubbing.
44	O・LMT	O	Record and playback muting output. Active “H”.

Pin No.	Pin Name	I／O	Description KEY DATA IN						
			KSCAN0 is “H”	KSCAN1 is “H”	KSCAN2 is “H”	KSCAN3 is “H”	KSCAN4 is “H”	DISP1 lights at “H”	DISP2 lights at “H”
45	DATA0	I	OPEN/CLOSE 2KEY IN	REC2 KEY IN	N・DUBB KEY IN		CONT PLAY BLANK SKIP SW IN	N・DUBB lights	F・PLAY2 lights
46	DATA1	I	OPEN/CLOSE 1KEY IN	PAUSE2 KEY IN	H・DUBB KEY IN		⇒ ⇐ SW IN	H・DUBB lights	R・PLAY2 lights
47	DATA2	I	RWD1 KEY IN	RWD2 KEY IN	CD・REC KEY IN		TIMER PLAY SW IN	CD・REC lights	PAUSE2 lights
48	DATA3	I	PLAY1 KEY IN	PLAY2 KEY IN	CROSS FADE KEY IN		TIMER REC SW IN	CROSS FADE lights	REC2 lights
49	DATA4	I	STOP1 KEY IN	STOP2 KEY IN	CD・HSP・REC KEY IN		DOLBY B SW IN	CD・HSP・ REC lights	F・PLAY1 lights
50	DATA5	I	FF1 KEY IN	FF2 KEY IN					R・PLAY1 lights
51	VP	－	GND.						
52	K・SCAN0	O	KEY SCAN outputs for DATA 0～DATA 5. These pins output “H” when reset. (K・SCAN3 not used.)						
53	K・SCAN1	O							
54	K・SCAN2	O							
55	K・SCAN3	O							
56	K・SCAN4	O							
57	DISP2	O	DISP 2 INDI. output pin.						
58	DISP2	O							
59	DISP2	O							
60	DISP2	O							
61	DISP1	O	DISP 1 INDI. output pin.						
62	DISP1	O							
63	DISP1	O							
64	VDD	－	Power supply pin. (+5V)						

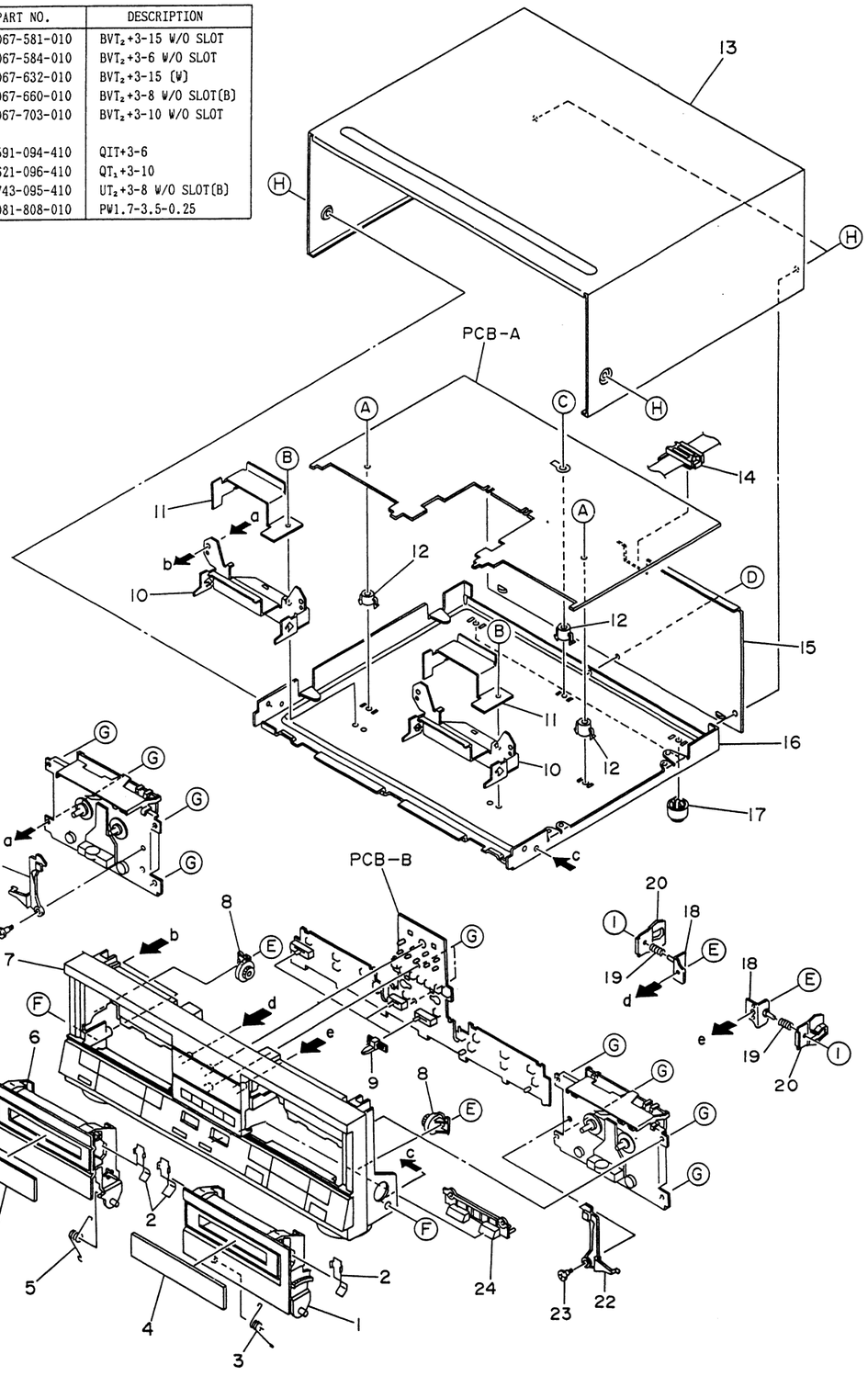
IC BLOCK DIAGRAM (FX－W86／W868)

IC,CXA1332



EXPLODED VIEW – 1 (FX – W86/W868)

REF.NO.	PART NO.	DESCRIPTION
A	87-067-581-010	BVT$_2$+3-15 W/O SLOT
B	87-067-584-010	BVT$_2$+3-6 W/O SLOT
C	87-067-632-010	BVT$_2$+3-15 (W)
D	87-067-660-010	BVT$_2$+3-8 W/O SLOT(B)
E	87-067-703-010	BVT$_2$+3-10 W/O SLOT
F	87-591-094-410	QIT+3-6
G	87-621-096-410	QT$_2$+3-10
H	87-743-095-410	UT$_2$+3-8 W/O SLOT(B)
I	87-081-808-010	PW1.7-3.5-0.25

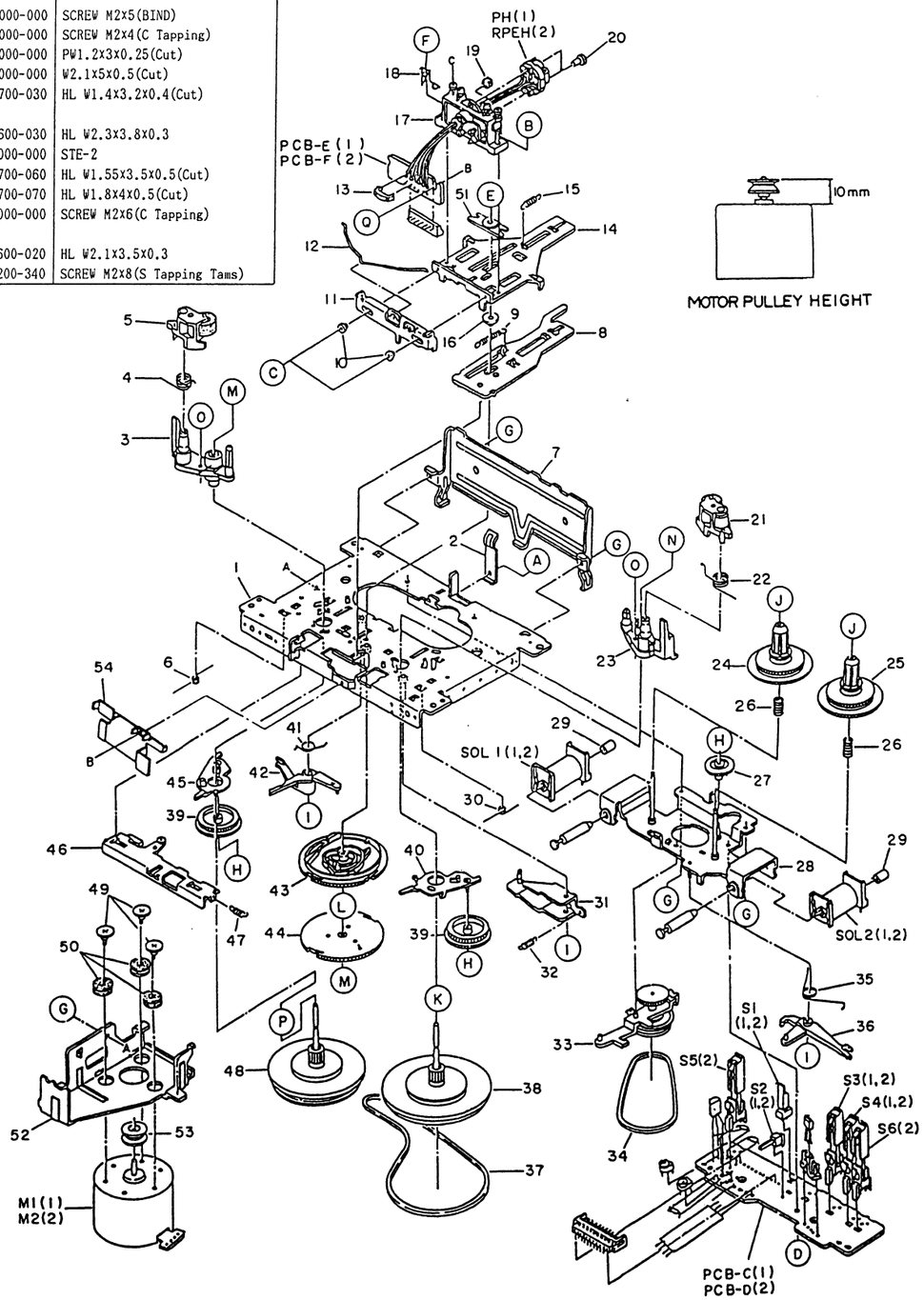


MECHANICAL PARTS LIST (FX – W86/W868)

PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q. TY
	1-1	89-VW6-008-119	BOX,CASSETTE 2	*	1
	1-2	★82-202-217-110	P-SPRING,CASSETTE HOLDER		4
	1-3	★86-VW6-202-019	T-SPRING,EJECT 2	*	1
	1-4	★89-VW5-016-019	WINDOW 1		2
	1-5	★89-VW6-201-019	T-SPRING,EJECT 1	*	1
	1-6	89-VW6-007-119	BOX,CASSETTE 1	*	1
	1-7	★09-047-573-010	CABINET FRONT ASSY(W868)	*	1
	1-7	★09-047-574-010	CABINET FRONT ASSY(W86)	*	1
	1-8	87-063-143-010	OIL-DUMPER 75		2
	1-9	★89-VW5-011-019	KNOB,SLIDE		3
	1-10	★89-VW5-201-010	HOLDER,MECHANISM		2
	1-11	★89-VW5-214-019	PLATE,SHIELD DECK		2
	1-12	★81-664-202-010	HOLDER,P.C.B		3
	1-13	★89-VW5-018-010	CABINET,STEEL		1
	1-14	★89-VT5-202-010	BUSHING,CORD		1
	1-15	★89-VW6-004-010	PANEL,REAR(W868 Y)	*	1
	1-15	★89-VW6-011-010	PANEL,REAR(W868 YJ)	*	1
	1-15	★89-VW6-006-010	PANEL,REAR(W86)	*	1
	1-16	81-693-220-119	CHASSIS,AMP		1
	1-17	★87-085-213-010	FOOT,H12.5		2
	1-18	★82-202-216-310	PLATE,LOCK CASSETTE BOX		2
	1-19	★81-715-234-010	C-SPRING,LOCK PLATE		2
	1-20	★81-693-209-010	HOLDER LOCK ASSY		2
	1-21	★81-653-212-010	LEVER,EJECT 1		1
	1-22	★81-653-214-010	LEVER,EJECT 2		1
	1-23	★81-653-213-010	SCREW,SPECIAL		2
	1-24	★89-VW5-019-119	BUTTON,DUBBING(W868)		1
	1-24	★89-VW5-010-019	BUTTON,DUBBING(W86)		1

EXPLODED VIEW – 2 (FX – W86/W868)

REF.NO.	PART NO.	DESCRIPTION
A	S9-178-000-000	SPECIAL SCREW M2x3(C Tapping)
B	S9-078-000-000	SCREW M2x5(Tams)
C	S9-547-000-000	SCREW M1.7x3(Camera)
D	S9-999-200-200	SCREW M2x5(S Tapping Tams)
E	S9-999-180-160	SPECIAL SCREW M2x5
F	S9-117-000-000	SCREW M2x5(BIND)
G	S9-180-000-000	SCREW M2x4(C Tapping)
H	S9-421-000-000	PW1.2x3x0.25(Cut)
I	S9-876-000-000	W2.1x5x0.5(Cut)
J	S9-999-700-030	HL W1.4x3.2x0.4(Cut)
K	S9-999-600-030	HL W2.3x3.8x0.3
L	S9-502-000-000	STE-2
M	S9-999-700-060	HL W1.55x3.5x0.5(Cut)
N	S9-999-700-070	HL W1.8x4x0.5(Cut)
O	S9-182-000-000	SCREW M2x6(C Tapping)
P	S9-999-600-020	HL W2.1x3.5x0.3
Q	S9-999-200-340	SCREW M2x8(S Tapping Tams)



PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q. TY
	2-1	---	CHASSIS ASSY		1
	2-2	★S1-829-100-010	SPRING,PACK		1
	2-3	★S1-880-090-090	FL METAL R ASSY		1
	2-4	★S1-880-040-040	P-SPRING,ARM R		1
	2-5	S1-880-043-020	PINCH ROLLER ARM R ASSY		1
	2-6	★S1-880-050-190	SPRING,TRIGGER ARM R		1
	2-7	★S1-880-530-020	PROTECTOR,SW		1
	2-8	★S1-880-025-010	HEAD PANEL B ASSY		1
	2-9	★S1-880-020-050	SPRING,PANEL		1
	2-10	★S1-865-020-280	COLLAR,CHP LEVER		2
	2-11	★S1-880-020-060	LEVER,CHP		1
	2-12	★S1-880-040-050	SPRING,PINCH ROLLER		1
	2-13	---	CLUMP,WIRE		1
	2-14	★S1-880-020-010	PANEL,HEAD		1
	2-15	★S1-880-020-040	SPRING,RC		1
	2-16	★S1-880-020-190	COLLAR,PANEL		1
	2-17	★S1-865-023-060	HEAD BASE ASSY		1
	2-18	★S1-865-020-600	SPRING,CLUMP		1
	2-19	★S1-865-090-610	SPACER		1
	2-20	★S9-999-180-170	SCREW,HEAD COLLAR		2
	2-21	S1-880-043-010	PINCH ROLLER ARM F ASSY		1
	2-22	★S1-880-040-030	P-SPRING,ARM F		1
	2-23	★S1-880-090-080	FL METAL ASSY		1
	2-24	S1-880-053-140	T REEL R ASSY		1
	2-25	S1-880-053-130	T REEL F ASSY		1
	2-26	★S1-880-050-220	SPRING,BT R		2
	2-27	★S1-880-050-080	GEAR,FF		1
	2-28	★S1-880-055-010	REEL BASE ASSY		1
	2-29	★S1-880-210-060	HOLDER,PLUNGER		2
	2-30	★S1-880-050-180	SPRING,TRIGGER ARM F		1
	2-31	★S1-880-215-020	P KICK LEVER ASSY		1
	2-32	★S1-880-210-110	SPRING,PK LEVER		1
	2-33	★S1-880-073-020	RF CLUTCH ASSY		1
	2-34	S1-880-070-080	BELT,RF		1
	2-35	★S1-880-050-170	SPRING,FR ARM TRIGGER		1
	2-36	★S1-880-050-150	ARM,RF TRIGGER		1
	2-37	S1-880-090-380	BELT,MAIN		1
	2-38	S1-880-093-070	FLYWHEEL F ASSY		1
	2-39	★S1-880-050-350	GEAR,T		2
	2-40	★S1-880-055-020	GEAR,T ARM F ASSY		1
	2-41	★S1-880-010-060	SPRING,M TRIGGER ARM		1
	2-42	★S1-880-210-030	ARM,M TRIGGER		1
	2-43	★S1-880-210-150	GEAR,M		1
	2-44	★S1-880-210-160	GEAR,RF CAM		1
	2-45	★S1-880-055-030	T GEAR ARM R ASSY		1
	2-46	★S1-880-215-010	CH SLIDE LEVER ASSY		1
	2-47	★S1-880-210-080	SPRING,CH SLIDE LEVER		1
	2-48	S1-880-093-080	FLYWHEEL R ASSY		1
	2-49	★S1-851-140-180	SCREW,MOTOR COLLAR		3
	2-50	★S1-821-120-660	RUBBER,MOTOR		3
	2-51	★S1-880-020-160	PLATE,PANEL SPRING		1
	2-52	★S1-880-090-110	BRACKET,MOTOR		1
	2-53	★S1-880-090-370	PULLEY,MOTOR		1
	2-54	★S1-880-020-180	PLATE,SHIELD		1

MODEL NO.

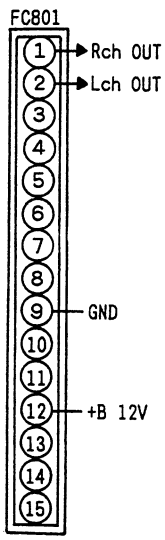
TX – D91

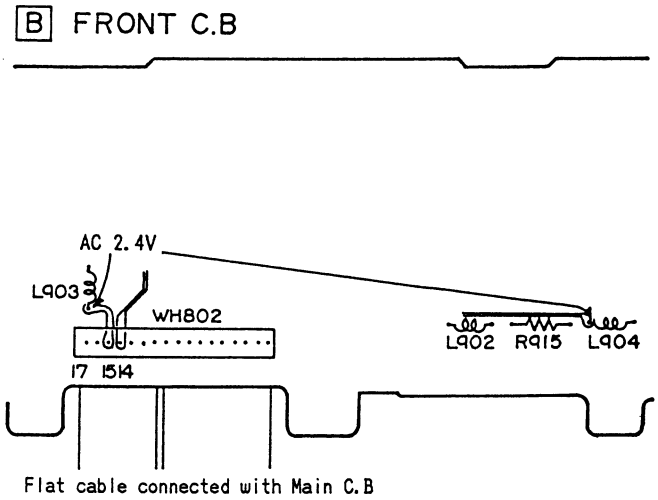
CAUTIONS WHEN SERVICING (TX – D91)

Model TX-D91 does not have a power supply circuit. Power is supplied to it through a 15-pin flat cable and the signal inputs/outputs are also performed through this cable.
When servicing the TX-D91 connect it to the MX-D86/D86M so that power is supplied to the TX-D91. If the MX-D86/D86M is not available, follow the procedure below.

(When servicing the unassembled TX-D91)

① Supply the following voltages to each FC801 terminal from an external power supply.

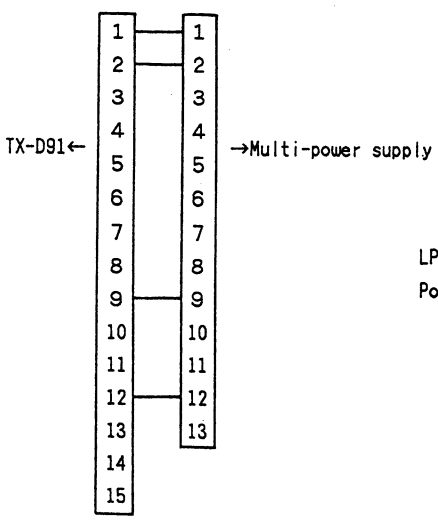




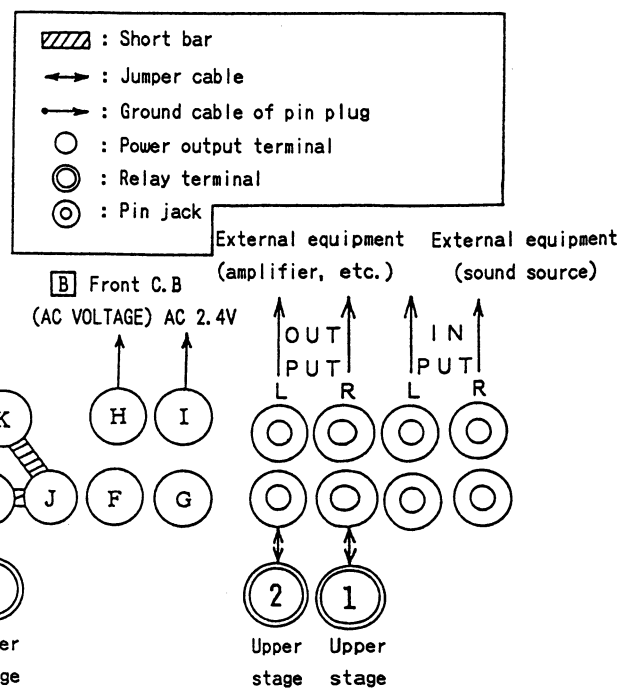
② Connection diagram when using multi power supply (LPS-9088).

1. Apply AC 2.4V to the section shown by arrows in the above diagram from a multi-power supply. (The display becomes dim because it is lower than the rated voltage.)
2. Turn the TX-D91 on using the SLEEP function since the POWER ON signal is not supplied.

Connect the multi-conversion harness for the MX-D86/D86M to J1.



Connection diagram of multi-conversion harness



ELECTRICAL MAIN PARTS LIST (TX – D91)

REF.NO.	PART NO.	DESCRIPTION
=== IC ===		
	87-001-533-010	IC,GP1U501X1(REMOTE SENSOR)
	87-001-942-019	IC,LA1265G
	87-001-376-019	IC,LC7218
	87-020-446-019	IC,TA7343AP
	87-001-727-010	IC,UPD75206CW-115
=== TRANSISTOR ===		
	89-501-615-019	FET,2SK161GR
	89-502-415-019	FET,2SK241GR
	89-502-464-019	FET,2SK246Y
	87-026-165-019	FET,3SK73GR(Z)
	89-110-155-019	TRANSISTOR,2SA1015GR
	89-318-154-019	TRANSISTOR,2SC1815Y
	89-318-155-019	TRANSISTOR,2SC1815GR
	89-319-233-019	TRANSISTOR,2SC1923(O)
	89-320-011-019	TRANSISTOR,2SC2001K
	87-026-214-019	TRANSISTOR,DTA114YS
	87-026-215-019	TRANSISTOR,DTC114YS
=== DIODE ===		
	87-001-559-019	DIODE,1SS131
	87-020-465-019	DIODE,1SS133
	87-027-449-019	ZENER,HZ15-3L
	87-027-349-019	ZENER,HZ6A1L
	87-027-702-019	ZENER,HZ6C2L
=== MAIN CIRCUIT BOARD SECTION ===		
AT801	★81-631-646-019	ANTENNA TERMINAL 2P PAL(ANTENNA)
C1	★87-018-103-019	CAP,CERA U 8.2P-50 SL(E,K)
C2	★87-018-134-019	CAP,CERA U 0.01-16 Y
C3	★87-018-102-019	CAP,CERA U 6.8P-50 SL(E,K)
C4	★87-018-102-019	CAP,CERA U 6.8P-50 SL(E,K)
C5	★87-018-098-019	CAP,CERA U 3.3P-50 SL(E,K)
C5	★87-018-097-019	CAP,CERA U 2.2P-50 SL(Z)
C6	★87-018-100-019	CAP,CERA U 4.7P-50 SL(E,K)
C6	★87-018-106-019	CAP,CERA U 15P-50 SL(Z)
C7	★87-018-096-019	CAP,CERA U 1P-50 SL
C8	★87-018-119-019	CAP,CERA U 100P-50 B
C9	★87-018-134-019	CAP,CERA U 0.01-16 Y
C10	★87-018-116-019	CAP,CERA U 56P-50 SL
C11	★87-018-107-019	CAP,CERA U 18P-50 SL
C12	★87-018-134-019	CAP,CERA U 0.01-16 Y
C13	★87-018-134-019	CAP,CERA U 0.01-16 Y
C14	★87-010-401-019	CAP,ELECT 1-50V SME
C16	★87-018-100-019	CAP,CERA U 4.7P-50 SL(E,K)
C16	★87-018-106-019	CAP,CERA U 15P-50 SL(Z)
C20	★87-018-100-019	CAP,CERA U 4.7P-50 SL(Z)
C21	★87-018-105-019	CAP,CERA U 12P-50 SL(Z)
C22	★87-018-134-019	CAP,CERA U 0.01-16Y(Z)
C23	★87-018-105-019	CAP,CERA U 12P-50 SL(Z)
C24	★87-018-105-019	CAP,CERA U 12P-50 SL(Z)
C50	★87-018-134-019	CAP,CERA U 0.01-16 Y
C51	★87-018-134-019	CAP,CERA U 0.01-16 Y
C54	★87-018-134-019	CAP,CERA U 0.01-16 Y
C121	★87-018-134-019	CAP,CERA U 0.01-16 Y
C122	★87-010-374-019	CAP,ELECT 47-10V
C123	★87-018-134-019	CAP,CERA U 0.01-16 Y
C201	★87-010-544-019	CAP,ELECT 0.1-50V
C202	★87-014-049-019	CAP,PP 470P-100 J
C205	★87-018-110-019	CAP,CERA U 24P-50 SL
C206	★87-018-121-019	CAP,CERA U 150P
C207	★87-014-050-019	CAP,PP 510P-100J
C208	★87-018-134-019	CAP,CERA U 0.01-16Y
C209	★87-010-405-019	CAP,ELECT 10-50 SME
C301	★87-018-134-019	CAP,CERA U 0.01-16 Y
C302	★87-018-134-019	CAP,CERA U 0.01-16 Y
C303	★87-010-382-019	CAP,ELECT 22-25V SME
C304	★87-018-125-019	CAP,CERA U 330P-50 B
C305	★87-010-402-019	CAP,ELECT 2.2-50V SME
C306	★87-010-402-019	CAP,ELECT 2.2-50V SME
C307	★87-010-403-019	CAP,ELECT 3.3-50V SME
C308	★87-010-405-019	CAP,ELECT 10-50 SME
C309	★87-010-544-019	CAP,ELECT 0.1-50V
C311	★87-010-404-019	CAP,ELECT 4.7-50V SME
C313	★87-018-134-019	CAP,CERA U 0.01-16 Y
C314	★87-018-134-019	CAP,CERA U 0.01-16 Y
C316	★87-010-401-019	CAP,ELECT 1-50V SME
C317	★87-010-401-019	CAP,ELECT 1-50V SME
C318	★87-018-134-019	CAP,CERA U 0.01-16 Y
C319	★87-018-134-019	CAP,CERA U 0.01-16 Y
C320	★87-018-134-019	CAP,CERA U 0.01-16 Y(E,K)
C321	★87-010-402-089	CAP,ELECT 2.2-50(Z)
C322	★87-010-402-089	CAP,ELECT 2.2-50(Z)
C401	★87-010-401-019	CAP,ELECT 1-50V SME
C402	★87-010-403-019	CAP,ELECT 3.3-50V SME
C403	★87-010-248-019	CAP,ELECT 220-10V SME
C404	★87-014-057-019	CAP,PP 1000P-100 J
C405	★87-010-405-019	CAP,ELECT 10-50 SME
C409	★87-010-402-019	CAP,ELECT 2.2-50V SME
C410	★87-010-402-019	CAP,ELECT 2.2-50V SME
C505	★87-010-402-019	CAP,ELECT 2.2-50V SME
C506	★87-010-402-019	CAP,ELECT 2.2-50V SME
C512	★87-010-401-019	CAP,ELECT 1-50V SME
C602	★87-010-381-019	CAP,ELECT 330-16V SME
C603	★87-010-263-019	CAP,ELECT 100-10V
C604	★87-010-221-019	CAP,ELECT 470-10V
C605	★87-010-405-019	CAP,ELECT 10-50 SME
C606	★87-010-263-019	CAP,ELECT 100-10V
C607	★87-010-247-019	CAP,ELECT 100-50V SME
C701	★87-018-134-019	CAP,CERA U 0.01-16 Y
C702	★87-010-263-019	CAP,ELECT 100-10V
C703	★87-018-134-019	CAP,CERA U 0.01-16 Y
C704	★87-018-134-019	CAP,CERA U 0.01-16 Y
C706	★87-018-106-019	CAP,CERA U 15P-50 SL
C707	★87-010-101-019	CAP,ELECT 220-16V SME
C708	★87-010-545-019	CAP,ELECT 0.22-50V SME
C709	★87-018-134-019	CAP,CERA U 0.01-16 Y
C710	★87-010-404-019	CAP,ELECT 4.7-50V SME
C712	★87-018-134-019	CAP,CERA U 0.01-16 Y
C713	★87-018-134-019	CAP,CERA U 0.01-16 Y
C715	★87-010-401-089	CAP,ELECT 1-50V SME
C717	★87-018-134-019	CAP,CERA U 0.01-16 Y(E,K)
C718	★87-010-101-019	CAP,ELECT 220-16V SME
C801	★87-018-134-019	CAP,CERA U 0.01-16 Y
C806	★87-018-134-089	CAP,CERA 0.01-16 Y
C811	★87-018-134-019	CAP,CERA U 0.01-16 Y(Z)
C812	★87-018-119-089	CAP,CERA U 100P-50B
CF121	★87-008-261-019	FILTER,SFE 10.7MA5-A(E,K)
CF121	★82-799-621-019	FILTER,MS2-A(Z)
CF122	★87-008-261-019	FILTER,SFE 10.7MA5-A
CF123	★87-008-261-019	FILTER,SFE10.7 MA-5-A(Z)
CF301	★82-794-670-019	FILTER,BFU 450C4N
CF801	89-VT5-618-110	CORD,FG 15P(AMP)
CON801	87-009-065-019	CONNECTOR 15P FG(DECK)
CON803	87-754-629-019	CONNECTOR XH M 2P(AM LOOP)(E,K)
D1	87-027-900-019	VARI-CAP,1SV147

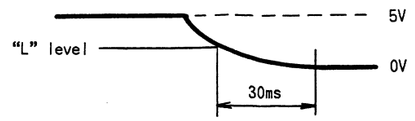
REF.NO.	PART NO.	DESCRIPTION
D2	87-027-900-019	VARI-CAP,1SV147
D3	87-027-900-019	VARI-CAP,1SV147
D21	87-027-900-019	VARI-CAP,1SV147(Z)
D201	81-754-634-019	VARI-CAP,KV1260
FIL1	87-030-105-010	FILTER,BPMB6A(Z)
L1	*87-006-198-019	COIL,ANT2-3/4 TS L5
L2	*87-006-199-019	COIL,ANT3/4 T L5
L3	*87-006-200-019	COIL,RF FM 3-1/2 T L5
L4	*87-006-201-019	COIL,RF FM 3-1/2 T L5
L5	*82-794-683-019	IFT,FM 6T
L6	*87-007-259-019	COIL,FM OSC (7K)N
L7	*87-003-098-019	COIL,2.2UH
L21	*87-006-202-019	COIL,RF FM4TSR,L5(Z)
L201	*87-006-190-019	COIL,MW ANT(3B)
L202	*87-006-177-019	COIL,LW ANT
L203	*82-794-687-019	COIL,MW OSC
L204	*82-794-688-019	COIL,LW OSC
L301	*81-631-611-019	COIL,QUAD (SINGLE)
L302	87-008-452-019	FILTER,CERAMIC CFAZ-450
L303	*87-003-098-019	COIL,2.2UH
L321	*82-794-697-019	FILTER,ANTI BIRDIE(Z)
L501	*87-008-253-019	FILTER,LPF
L601	*87-003-136-019	COIL,100UH
L701	*87-003-098-019	COIL,2.2UH
PT601	89-VT5-624-019	POWER TRANSFORMER FL
SFR301	*87-024-174-019	SFR,33K
SFR401	*87-024-171-019	SFR,4.7K
TC1	*87-011-219-019	CAP,TRIMMER 10P VCT
TC2	*87-011-219-019	CAP,TRIMMER 10P VCT
TC21	*87-011-219-019	CAP,TRIMMER 10P(Z)
TC211	*87-011-220-019	CAP,TRIMMER 20P
TC212	*87-011-221-019	CAP,TRIMMER 30P
TC701	*87-011-221-019	CAP,TRIMMER 30P VC51
X701	*87-030-163-019	RESONATOR,CRYSTAL 7.2MHZ(NDK)

=== FRONT CIRCUIT BOARD SECTION ===

REF.NO.	PART NO.	DESCRIPTION
C810	*87-018-119-019	CAP,CERA U 100P-50 B
C901	*87-018-131-019	CAP,CERA U 1000P-50 B
C902	*87-018-134-019	CAP,CERA U 0.01-16 Y
C903	*87-018-134-019	CAP,CERA U 0.01-16 Y
C905	*87-018-134-019	CAP,CERA U 0.01-16 Y
C906	*87-018-134-019	CAP,CERA U 0.01-16 Y
C907	*87-018-131-019	CAP,CERA U 1000P-50 B
C908	*87-010-405-019	CAP,ELECT 10-50 SME
C909	*87-018-134-019	CAP,CERA U 0.01-16 Y
C910	*87-010-252-019	CAP,ELECT 1000-6.3V
C911	*87-010-071-019	CAP,ELECT 1-50V
C912	*87-010-071-019	CAP,ELECT 1-50V
C913	*87-010-374-019	CAP,ELECT 47-10V
C914	*87-010-401-019	CAP,ELECT 1-50V SME
C915	*87-010-415-089	CAP,ELECT 10-50 SRE
CF901	*87-008-394-019	FILTER,CERAMIC CST 4.19 MGW
FL901	81-690-620-010	FL,9BT-44GK(DISPLAY)
L901	*87-003-102-019	COIL,10UH
L902	*87-003-102-019	COIL,10UH
L905	*87-003-102-019	COIL,10UH
L906	*87-003-102-019	COIL,10UH
SW1	87-036-142-019	TACT SW(STATION PRESET1)
SW2	87-036-142-019	TACT SW(STATION PRESET2)
SW3	87-036-142-019	TACT SW(STATION PRESET3)
SW4	87-036-142-019	TACT SW(STATION PRESET4)
SW5	87-036-142-019	TACT SW(STATION PRESET5)
SW6	87-036-142-019	TACT SW(STATION PRESET6)
SW7	87-036-142-019	TACT SW(STATION PRESET7)
SW8	87-036-142-019	TACT SW(STATION PRESET8)
SW9	87-036-142-019	TACT SW(STATION PRESET9)
SW10	87-036-142-019	TACT SW(STATION PRESET10)
SW11	87-036-142-019	TACT SW(BAND)
SW12	87-036-142-019	TACT SW(TUNING/TIMER UP)
SW13	87-036-142-019	TACT SW(TUNING/TIMER DOWN)
SW14	87-036-142-019	TACT SW(SET/MEMO)
SW15	87-036-142-019	TACT SW(MODE)
SW16	87-036-142-019	TACT SW(DISPLAY)
SW17	87-036-142-019	TACT SW(SLEEP)
SW18	87-036-142-019	TACT SW(TIMER/STANDBY)

IC DESCRIPTION (TX – D91)

IC,UPD75206 CW–115

Pin No.	Pin Name	I/O	Description
1 ~ 4	Se ~ Sh	O	Segment signal outputs and key scan signal outputs. Active "H".
5	$\overline{\text{PBK}}$ (Power Brake)	I	Input to detect a power failure. When this pin continues to be "L" for 30ms at more, a power failure is detected (the unit enters the power backup state). 
6	TEST 1	I	Test mode setting inputs.
16	TEST 2		
17	TEST 3		
7	POW SW	I	Power control input. The power is turned on and off alternately (the rise is detected) every time the power switch is pressed. When the power is turned on, PLL (LC7218), Pin 11 POW goes "H".
8	$\overline{\text{SD}}$	I	Input to stop auto scanning. Active "L". ◦ This input is not accepted during power off. ◦ This input lights "TUNE". ◦ SD is detected every 5ms during auto scanning, and when 4 "L" pulses are counted, auto scanning is stopped. ◦ SD is not detected during manual tuning.
9	REMOCON	I	Remote control serial data input. Active "H" (the rise is detected)
10	T. BASE	I	Receives 8Hz from the PLL (LC7218) as a time base clock signal.
11 ~ 15	$\overline{\text{SIGNAL 1}}$ ~ $\overline{\text{SIGNAL 5}}$	–	Ground.
18	$\overline{\text{K. MUTE}}$	O	Outputs a muting signal when any key is operated. Active "L".
19	$\overline{\text{ST}}$	I	Input to light the STEREO indicator. ◦ This input is not accepted when power is off.
20	——	–	Unused.
21 ~ 24	K0 ~ K3	I	Auto scanning inputs.
25	——	–	Unused.
26	$\overline{\text{FM AUTO}}$	O	Outputs a signal depending on the mode selected by the MODE key during FM reception. Active "L" when the AUTO indicator lights. ◦ IF the AUTO indicator changes when a frequency is selected in timer programming, the output is the channel being received.
27	CLK	O	Output ports to transfer serial data to the PLL (LC7218). Active "H".
28	DATA		
29	CE		
30	X_1	–	A ceramic oscillator which generates a main system clock signal (4.19MHz).
31	X_2		
32	VSS	–	Ground.
33	XT_1	–	Unused (connected to ground).
34	XT_2	–	Unused.

Pin No.	Pin Name	I/O	Description
35	B_0	I	Inputs to select the frequency range, etc. accordng to the destination to which the unit is to be shipped, using 3 bits.
36	B_1		
37	B_2		
38	10/12 MEMORY	I	Input to select the number of preset memories 10 or 12. "L" input assigns 10 memories and "H" input assigns 12 memories.
39	$\overline{\text{RESET}}$	I	System reset input.
40 ~ 48	D_1 ~ D_9	O	Digit signal outputs. Active "H".
49	——	–	Unused.
50	TIMER ON	–	Unused.
51	——	–	Unused.
52	START/CUT	–	Unused.
53	——	–	Unused.
54	——	–	Unused.
55	——	–	Unused.
56	VLOAD	I	Power supply pin of the output buffer in the FL display.
57	VPRE	I	For connection of pull-down resistor of the FL display.
58	Sj	O	Sj, Si : Unused.
59	Si		
60	Sd		Segment signal outputs and key scan signal outputs. Active "H".
61	Sc		
62	Sb		
63	Sa		
64	VDD	–	Power supply pin. 5V±10%

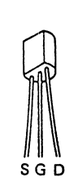
Destination / Pin	H	U	E,Z	K
B_0	H	L	H	H
B_1	H	L	L	L
B_2	*	H	H	L

H: HIGH (pull-up)
L: LOW (pull-down)
*: Changed by a switch

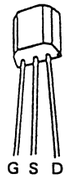
IC,LC7218

Pin No.	Pin Name	I/O	Description
1	X IN	–	Clock oscillator connection pins. A 7.2MHz crystal oscillator is connected.
24	X OUT		
2	CE	I	When a key is operated, signals are transferred from the CPU. Active "H".
3	DATA		
4	CLK		
5 ~ 8	——	–	Unused.
9	T. BASE	O	Outputs an 8Hz signal. Transfers it to the CPU as a time base clock signal.
10	——	–	Unused.
11	POW ON	O	Power control output. Outputs "H" during power on.
12	——	–	Unused.
13	MW(AM)−L	O	Outputs "L" when an MW(AM) broadcast is received. Unused.
14	——	–	Unused.
15	——	–	Unused.
16			
17	FM−L	O	Outputs "L" when an FM broadcast is received.
18	AM IN	I	AM local oscillation input.
19	FM IN	I	FM local oscillation input.
20	VDD	–	Power supply pin. 5V±10%
21	EO_1	O	PLL error output.
22	EO_2	–	Unused.
23	VSS	–	Ground pin.

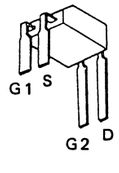
TRANSISTOR ILLUSTRATION (MX − D86M,FX − W86/W868,TX − D91)



2SK246

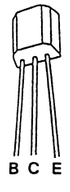


2SK161
2SK241



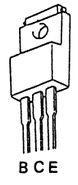
3SK73

DTA114
DTA144
DTC114
DTC143
2SD2144

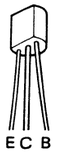


RN2202
RN2204

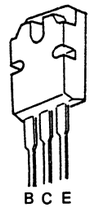
2SC1923
2SD655



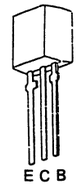
2SB1370



2SA933
2SA952
2SA1015
2SA1296
2SA1318
2SC945
2SC1815
2SC1740
2SC2001
2SC3266
ESA1266

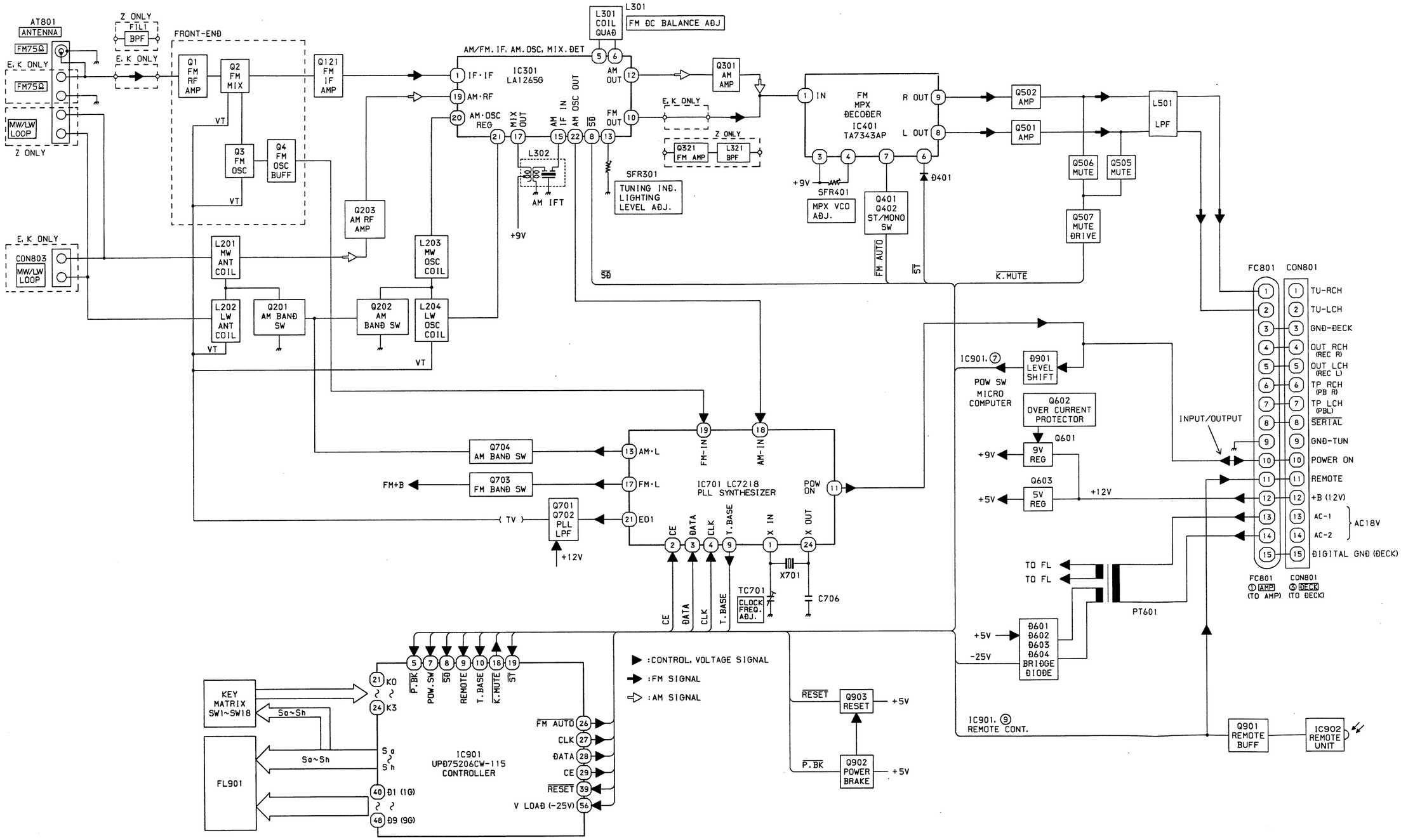


2SA1263



2SB1329

BLOCK DIAGRAM (TX – D91)



A MAIN C.B

AT801 ANTENNA

FM 75Ω

FM 75Ω

CON803 MW/LW LOOP ANT

CON803

FC801 ① AMP (TO AMP)

FC801 1 15 (WHT)

CON801 ③ DECK (TO DECK)

CON801

PT601

GRAPHIC SYMBOLS PRINTED CIRCUIT BOARD OF ELECT.CAP.ARE DESIGNED AS NEGATIVE POLE.
(プリント基板内のケミコンの極性表示は⊖表示です。)

CON802

TO B FRONT C.B HW802

PRESET STATION

SW5 5 SW4 4 SW3 3 SW2 2 SW1 1
SW10 10 SW9 9 SW8 8 SW7 7 SW6 6

B FRONT C.B

xx-xxx-S1A-69

SW14 SET/MEMO
SW15 MODE
SW16 DISPLAY
SW12 UP
SW13 DOWN
SW11 BAND
TUNING/TIMER

IC902 REMOTE SENSOR

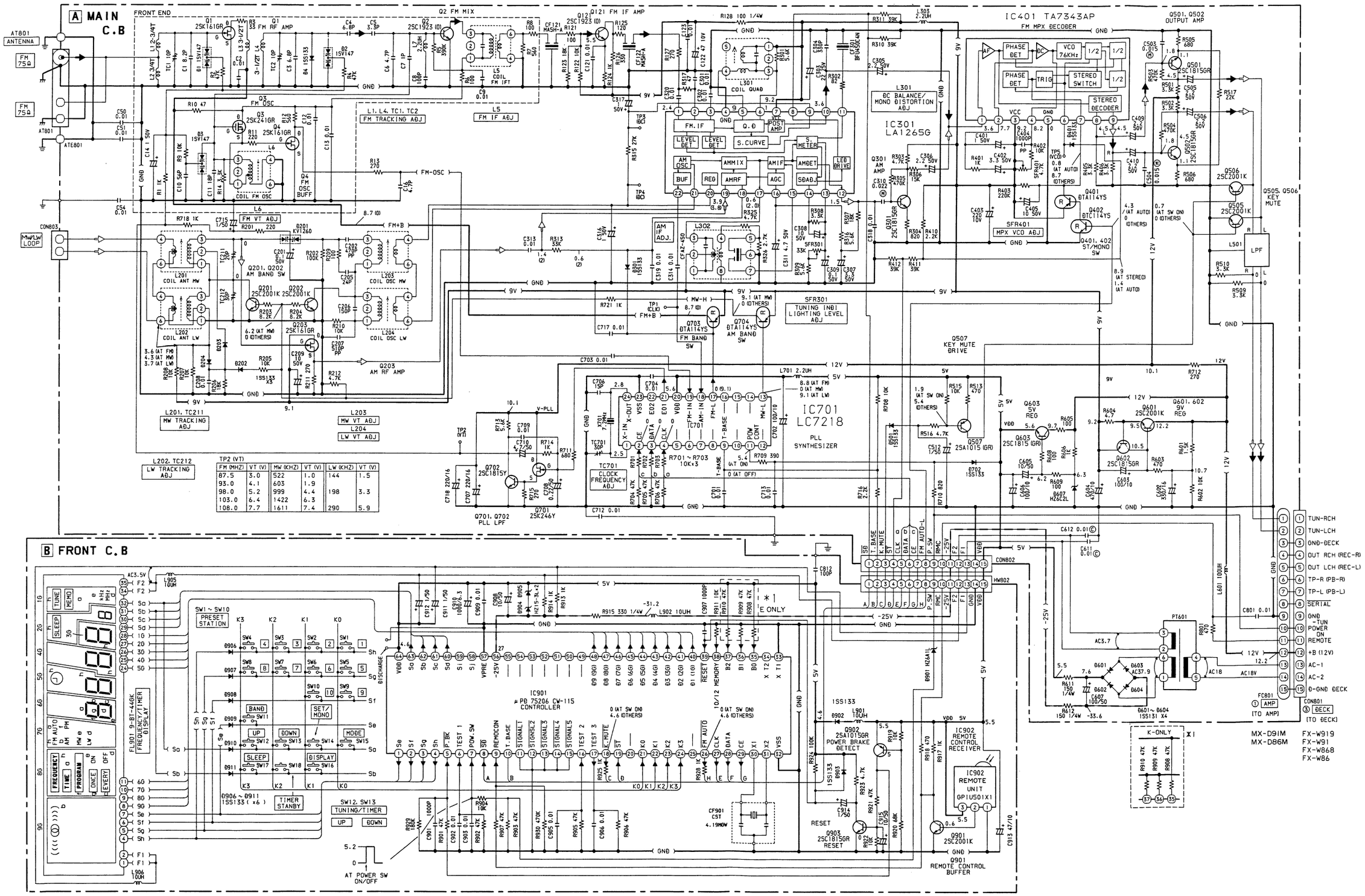
TO A MAIN C.B CON802

FL901 FREQUENCY/TIMER DISPLAY

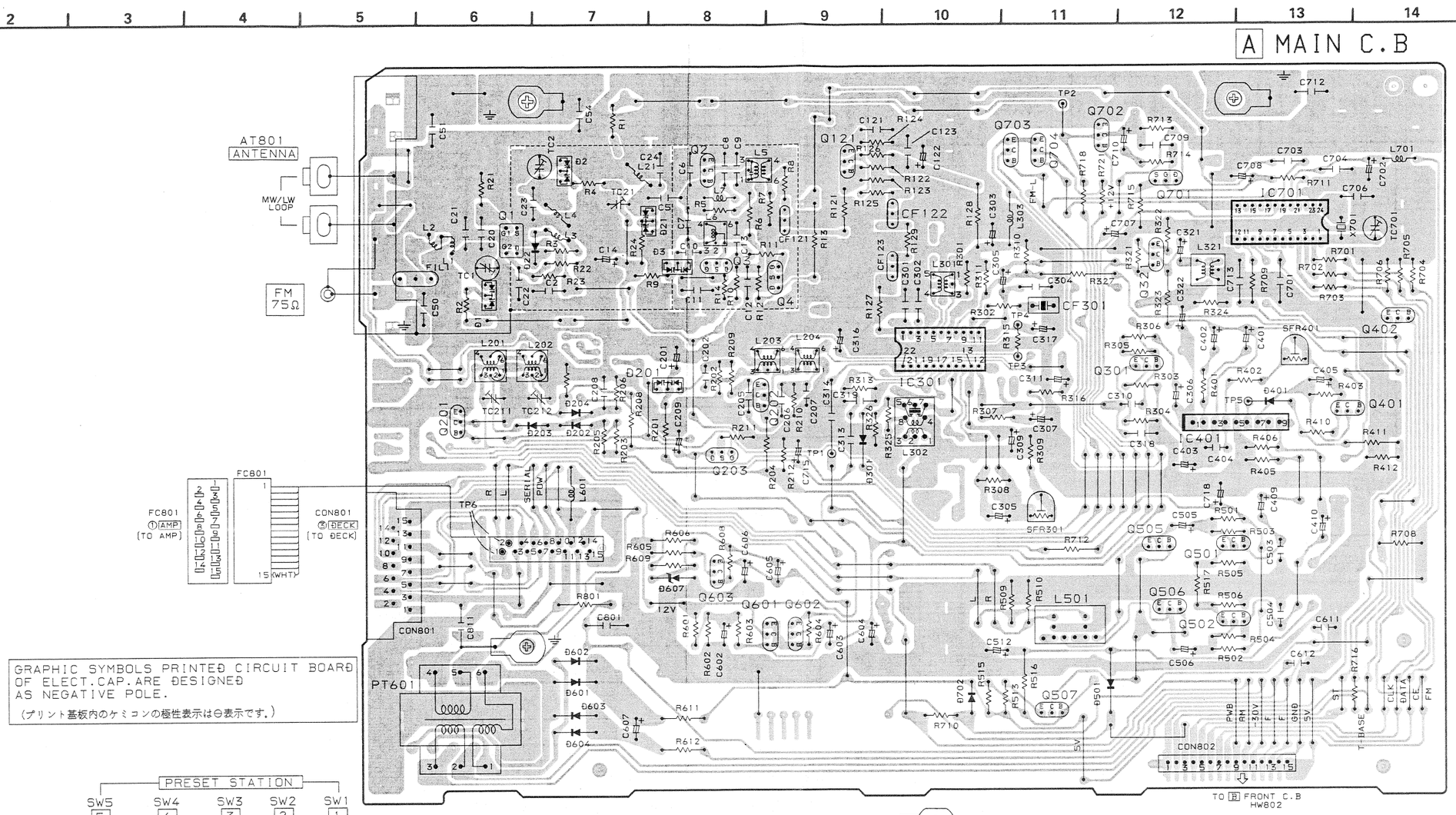
SW18 TIMER/STANDBY

SW17 SLEEP

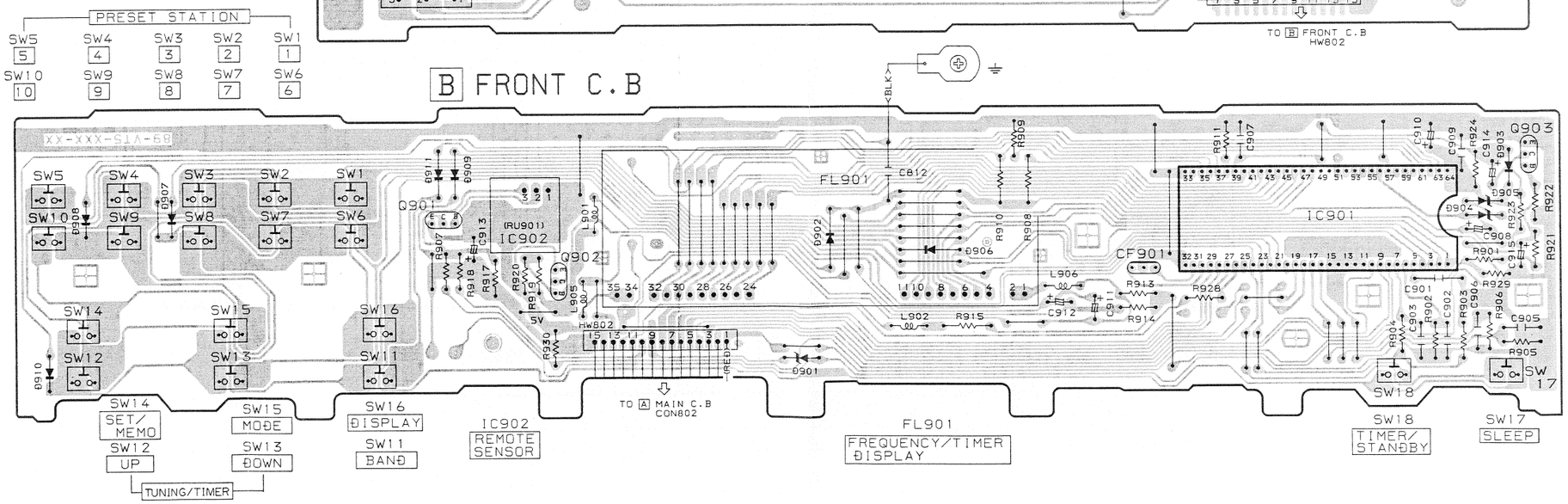
SCHEMATIC DIAGRAM — 1 (TX — D91 YE,YK)



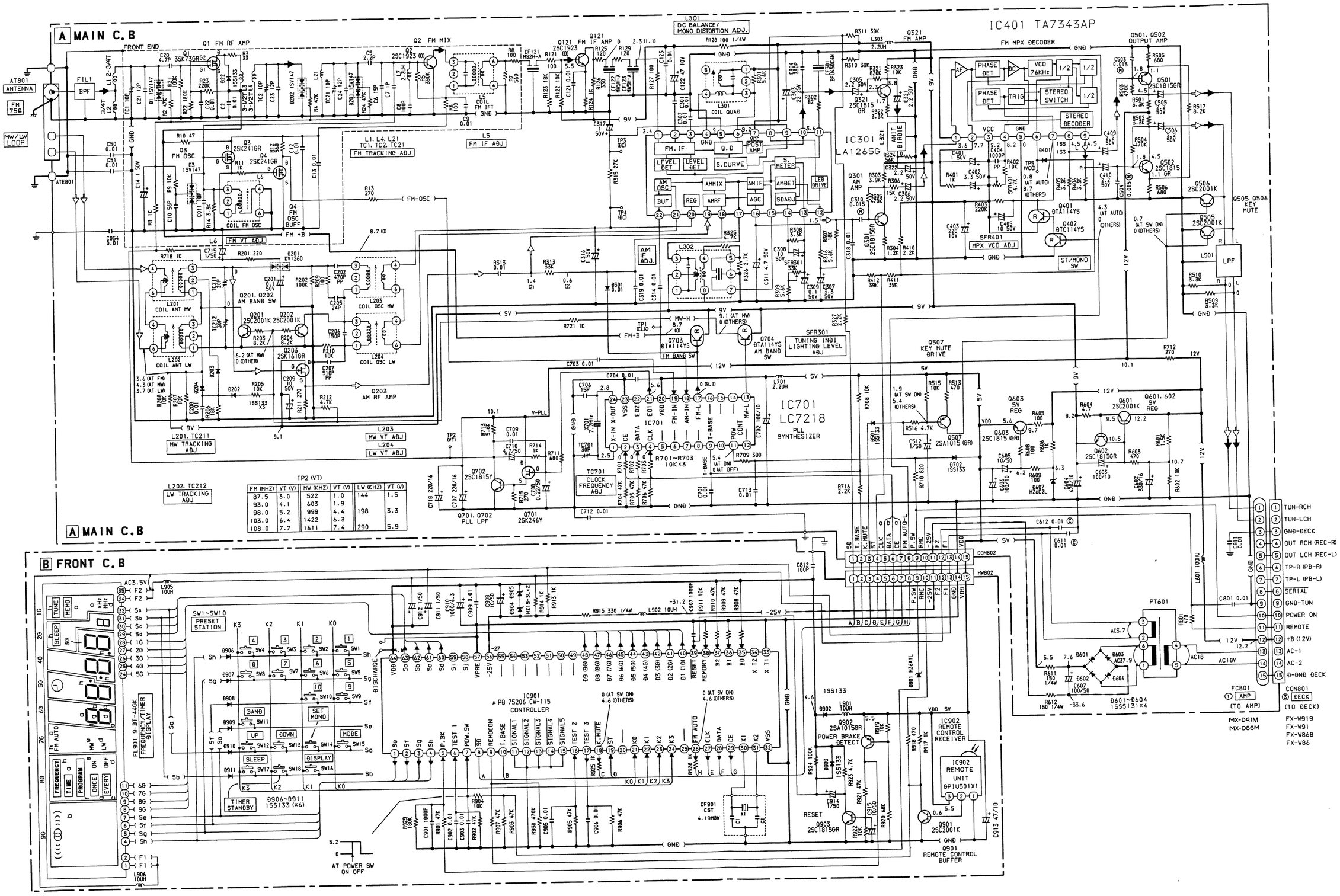
A MAIN C.B



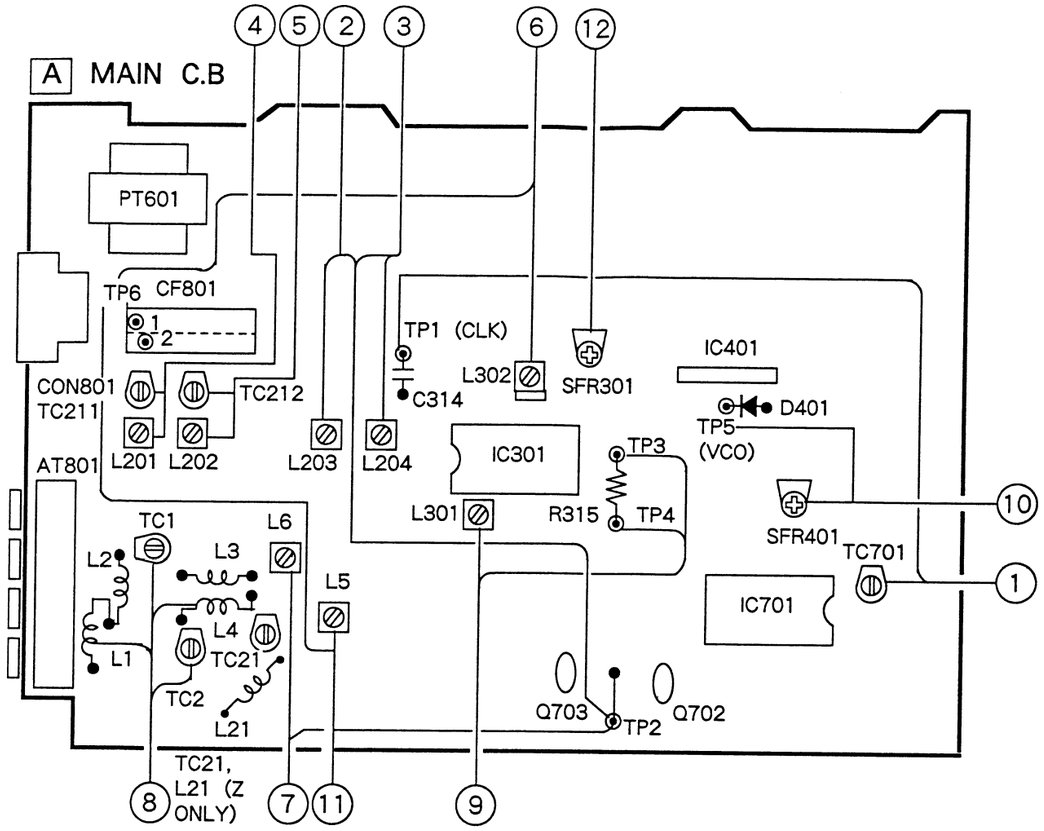
GRAPHIC SYMBOLS PRINTED CIRCUIT BOARD OF ELECT.CAP. ARE DESIGNED AS NEGATIVE POLE.
(プリント基板内のケミコンの極性表示は⊖表示です。)



SCHEMATIC DIAGRAM – 2 (TX – D91 YZ)



FM (MHZ)	VT (V)	MW (KHZ)	VT (V)	LW (KHZ)	VT (V)
87.5	3.0	522	1.0	144	1.5
93.0	4.1	603	1.9		
98.0	5.2	999	4.4	198	3.3
103.0	6.4	1422	6.3		
108.0	7.7	1611	7.4	290	5.9



(TUNER SECTION)

1. Clock Frequency Adjustment
   Settings : • Test point : TP1
   • Adjustment location : TC701
   Method : Set to MW 1611kHz and adjust so that the test point becomes 2061kHz±0.01kHz.

2. MW VT Adjustment
   Settings : • Test point : TP2
   • Adjustment location : L203
   Method : Set to MW 522kHz and adjust so that the test point becomes 0.9V±0.05V.

3. LW VT Adjustment
   Settings : • Test point : TP2
   • Adjustment location : L204
   Method : Set to LW 144kHz and adjust so that the test point becomes 1.5V±0.05V.

4. MW Tracking Adjustment
   Settings : • Test point : TP6
   L201 ・・・・・・・・・・・・・・・・・・・・ 603kHz
   TC211・・・・・・・・・・・・・・・・・・・・ 1404kHz
   Method : Output level become maximum.

5. LW Tracking Adjustment
   Settings : • Test point : TP6
   L202 ・・・・・・・・・・・・・・・・・・・・ 144kHz
   TC212・・・・・・・・・・・・・・・・・・・・ 290kHz
   Method : Output level become maximum.

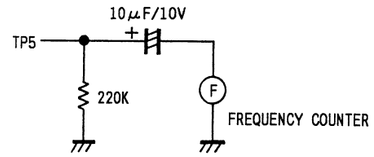
6. AM IF Adjustment
   Settings : • Test point : TP6
   L302 ・・・・・・・・・・・・・・・・・・・・ 450kHz

7. FM VT Adjustment
   Settings : • Test point : TP2
   • Adjustment location : L6
   Method : Set to FM 87.5MHz and adjust L6 so that TP2 becomes 3.0V±0.05V.

8. FM Tracking Adjustment
   Settings : • Test point : TP6
   L1, L4 (E,K) } ・・・・・・・・・・・・・・ 87.5MHz
   L1, L4, L21 (Z) }
   TC1, TC2 (E,K) } ・・・・・・・・・・・・・・ 108MHz
   TC1, TC2, TC21 (Z) }
   Method : Output level become maximum. Confirm at 98.0MHz, distortion less than 3%.

9. DC Balance/MONO Distortion Adjustment
   Settings : • Test point : TP3, TP4 (DC balance)
   TP6 (Distortion)
   • Adjustment location : L301
   Method : Set to FM 98.0MHz and adjust L301 so that TP3 and TP4 becomes 0V±0.02V. Next, adjust L301 so that the distortion becomes minimum (less than 0.6%).

10. MPX VCO Adjustment
    Settings : • Test point : TP5
    • MODE SW : STEREO
    • Adjustment location : SFR401
    Method : Connect a capacitor and a resistor as below. Set to FM 98.0MHz non modulation and adjust so that the frequency at test point becomes 38kHz±0.05kHz.



11. FM IF Adjustment
    Settings : • Test point : TP6
    L5 ・・・・・・・・・・・・・・・・・・・・ 10.7MHz

12. Tuning Indicator Lighting Level Adjustment
    Settings : • Adjustment location : SFR301
    Method : Apply an FM 98.0MHz, 18dB signal and adjust so that the "TUNE" indicator lights. Lower the input level by 2dB and check that the "TUNE" indicator goes out.

PRACTICAL SERVICE FIGURE (TX – D91)

〈FM SECTION〉

Usable Sensitivity : (THD 3%)	E, K MODELS 4±5dB (at 87.5, 98.0, 108.0MHz) Z MODEL 8±5dB (at 87.5MHz) 7±5dB (at 98.0MHz) 7±5dB (at 108.0MHz)
S/N 50dB Quieting Sensitivity :	E, K MODELS 28±6dB (at 87.5, 90.0, 108.0MHz) Z MODEL 32±6dB (at 87.5, 90.0, 108.0MHz)
Signal to Noise Ratio :	(MONO.) E, K MODELS More than 68dB (at 98.0MHz) Z MODEL More than 65dB (at 98.0MHz) (STEREO) E, K MODELS More than 62dB (at 98.0MHz) Z MODEL More than 58dB (at 98.0MHz)
Total Harmonic Distortion :	(MONO.) Less than 0.8% (at 98.0MHz) (STEREO) Less than 1.0% (at 98.0MHz)
Stereo Separation :	More than 25dB
Intermediate Frequency :	10.7MHz

〈MW SECTION〉

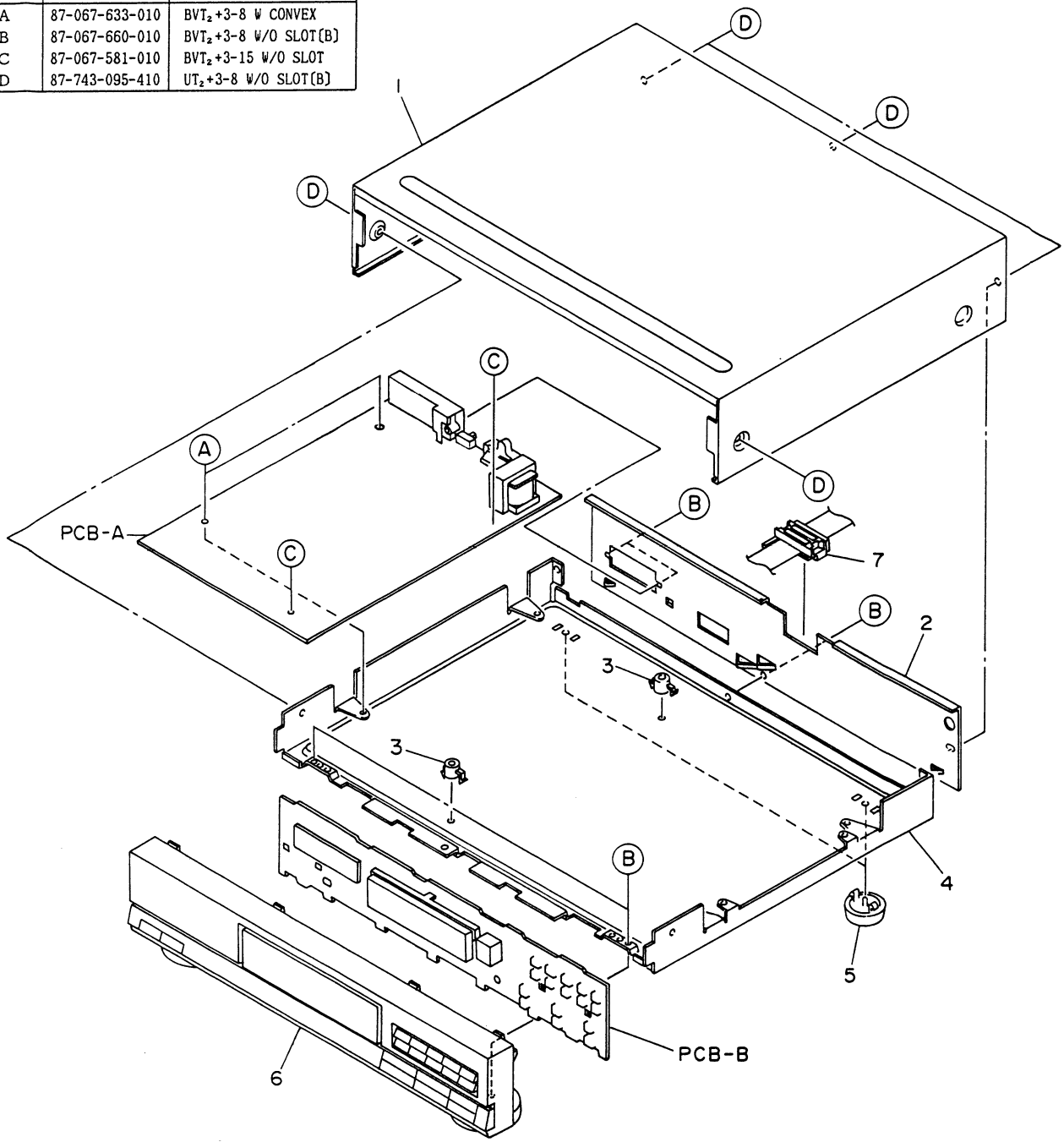
Sensitivity :	57±3dB (at 603kHz) 54±3dB (at 999kHz) 53±3dB (at 1404kHz)
Total Harmonic Distortion:	Less than 2.0% (at 999kHz)
Intermediate Frequency :	450kHz

〈LW SECTION〉

Sensitivity :	64±5dB (at 144, 198, 290kHz)
Intermediate Frequency :	450kHz

EXPLODED VIEW (TX – D91)

REF.NO.	PART NO.	DESCRIPTION
A	87-067-633-010	BVT_2+3-8 W CONVEX
B	87-067-660-010	BVT_2+3-8 W/O SLOT(B)
C	87-067-581-010	BVT_2+3-15 W/O SLOT
D	87-743-095-410	UT_2+3-8 W/O SLOT(B)



MECHANICAL PARTS LIST (TX – D91)

PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q'TY
	1	*89-VT5-003-010	CABINET,STEEL	*	1
	2	*89-VT5-021-119	PANEL,REAR(H)	*	1
	2	*89-VT5-026-119	PANEL,REAR(HJ)	*	1
	2	*89-VT5-022-019	PANEL,REAR(U)	*	1
	2	*89-VT5-023-019	PANEL,REAR(E)	*	1
	2	*89-VT5-024-019	PANEL,REAR(K)	*	1
	2	*89-VT5-025-019	PANEL,REAR(Z)	*	1
	3	*81-664-202-010	HOLDER,P.C.B		2
	4	---	CHASSIS,AMP		1
	5	*87-085-213-010	FOOT,H12.5		2
	6	*09-047-558-010	FRONT CABINET ASSY(EXCEPT U)	*	1
	6	*09-047-583-010	FRONT CABINET ASSY(U)	*	1
	7	*89-VT5-202-010	BUSHING,CORD	*	1

MODEL NO.

SX – D86/E86

■ SPEAKER LIST (SX – D86/E86)

PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q, TY
	1	89-VS6-001-010	CABINET D(D86)	*	2
	2	89-VS6-005-010	CABINET E(E86)	*	2
	3	89-VS6-002-010	PANEL WOOFER	*	2
	4	89-VS6-003-010	PANEL MIDRANGE	*	2
	5	89-VS6-004-010	PANEL TWEETER	*	2
	6	89-VS6-007-010	GRILL ASSY D(D86)	*	2
	7	89-VS6-008-010	GRILL ASSY E(E86)	*	2
	8	89-VS6-602-010	SPEAKER WOOFER(D86)	*	2
	9	89-VS6-606-010	SPEAKER WOOFER(E86)	*	2
	10	89-VS5-609-010	SPEAKER TWEETER		2
	11	89-MS7-605-010	SPEAKER CERAMIC		2
	12	89-VS6-610-010	NETWORK ASSY(D86)	*	2
	13	89-VS6-612-010	NETWORK ASSY(E86)	*	2
	14	83-096-614-010	SPEAKER CORD(D86)		2
	15	81-695-613-010	SPEAKER CORD(E86)		2

■ ACCESSORIES/PACKAGE LIST

PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q, TY
	1	*89-VK6-904-019	INSTRUCTION BOOKLET,H(H)	*	1
	2	*89-VK6-907-019	INSTRUCTION BOOKLET,H(MH)	*	1
	3	*89-VK6-905-019	INSTRUCTION BOOKLET,E(E,K,Z)	*	1
	4	*81-653-645-010	AM LOOP ANT(6T) NC(H,Z)		1
	5	*81-653-647-010	AM LOOP ANT(6T) CON(E,K)		1
	6	*81-748-632-010	FM FEEDER ANT N(H,E,K)		1
	7	*87-043-106-010	FM WIRE ANT Z(Z)		1
	8	*87-042-062-010	SIEMENS PLUG(H)		1
	9	*89-VR6-005-019	REMOTE-UNIT RC-T86FYBN(H)	*	1
	10	*89-VR6-011-019	REMOTE-UNIT RC-T86MFYBN(MH)	*	1
	11	*89-VR6-012-019	REMOTE-UNIT RC-T86MLYBN(E,K,Z)	*	1